This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

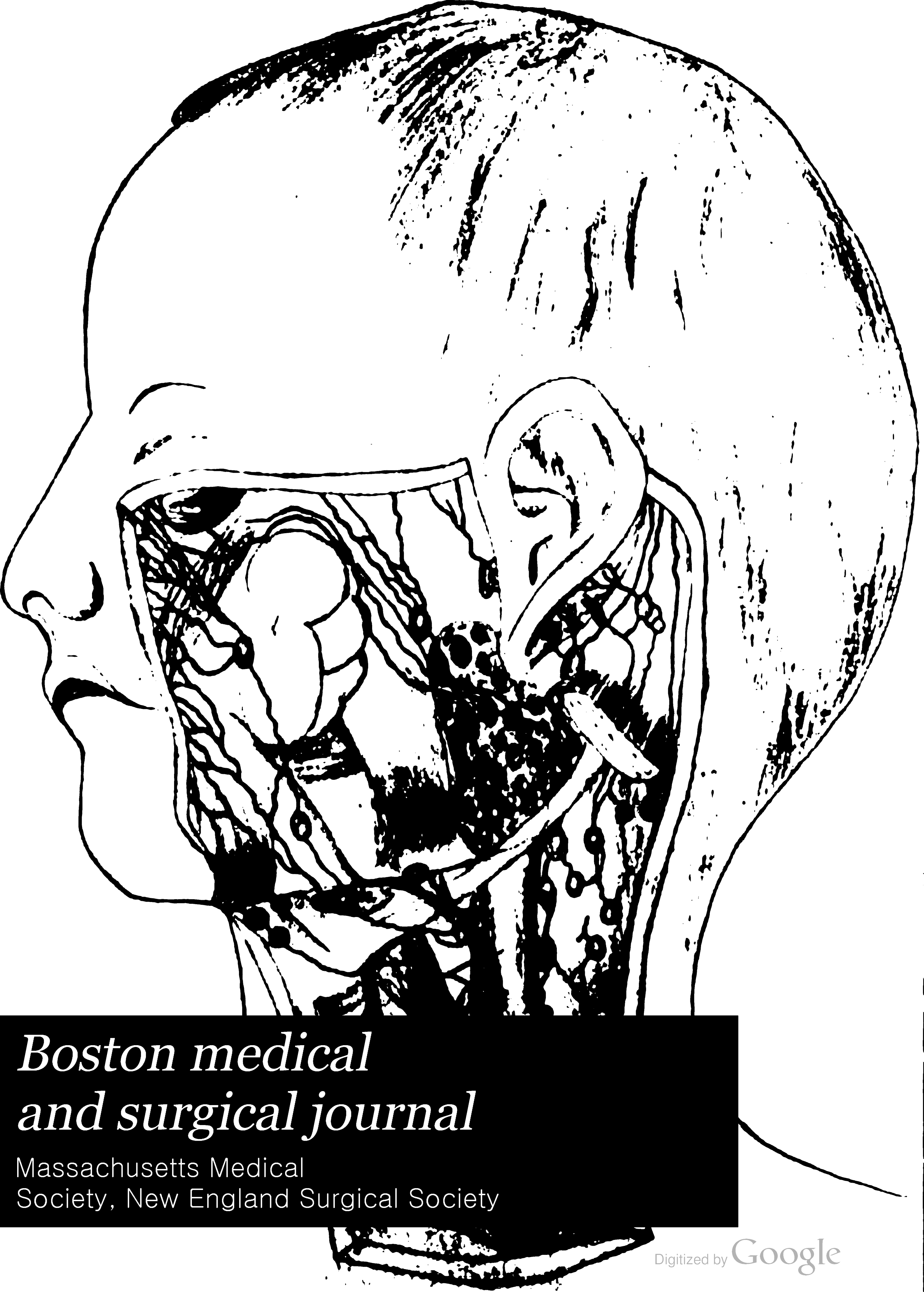
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`



Boston medical and surgical journal

Massachusetts Medical
Society, New England Surgical Society

Sci 3320.3

Harvard College Library

FROM

The Journal

THE BOSTON
MEDICAL AND SURGICAL JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

EDITORS
ROBERT M. GREEN, M.D., EDITOR-IN-CHIEF
GEORGE G. SMITH, M.D., ASSISTANT EDITOR
WALTER L. BURRAGE, M.D. } *For the Massachusetts Medical Society*
FREDERICK T. LORD, M.D. }

VOLUME CLXXII

JANUARY—JUNE, 1915

BOSTON
THE BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.
1915

Sci [illegible]
134.52

CONTRIBUTORS TO VOLUME CLXXII

ABRAHAMS, HENRY
ALLEN, C. J., M.D.
ALLEN, FREDERICK M., M.D.
ARKIN, LOUIS, M.D.
ARMSTRONG, DONALD B., M.D.
AUSTIN, A. EVERETT, M.D.
AUSTIN, C. K., M.D.
AVERILL, J. H., M.D.
BALCH, F. G., M.D.
BANCROFT, CHARLES P., M.D.
BARTLETT, P. CHALLIS, M.D.
BATES, EVERETT A., M.D.
BECKLEY, CHESTER C., M.D.
BERRY, GORDON, M.D.
BIEBERBACH, WALTER D., M.D.
BLAISDELL, J. HARPER, M.D.
BOARDMAN, MABEL T.
BOHM, MAX, M.D.
BOWDITCH, VINCENT Y., M.D.
BOWEN, JOHN T., M.D.
BOWERS, WALTER P., M.D.
BRADFORD, E. H., M.D.
BRICKLEY, WILLIAM J., M.D.
BRYANT, JOHN, M.D.
BUCHOLZ, HERMANN, M.D.
BUFFORD, J. H., M.D.
BURRAGE, WALTER L., M.D.
CABOT, HUGH, M.D.
CABOT, RICHARD C., M.D.
CANAVAN, M. M., M.D.
CHADWICK, HENRY D., M.D.
CHASE, HENRY M., M.D.
CHEEVER, DAVID W., M.D.
CHRISTIAN, HENRY A., M.D.
CLAP, EDMUND W., M.D.
CLARK, L. PIERCE, M.D.
COLE, LEWIS GREGORY, M.D.
COOLIDGE, ALGERNON, M.D.
CORY, T. K.
COTTON, F. J., M.D.
COUES, WM. PIERCE, M.D.
COURTNEY, J. W., M.D.
CUTLER, ELBRIDGE G., M.D.
CRANE, BAYARD T., M.D.
CROSBIE, ARTHUR HALLAM, M.D.
CROWELL, SAMUEL, M.D.
CURTIS, FRANCIS G., M.D.
CUSHING, HARVEY, M.D.
DANA, HAROLD W., M.D.
DANFORTH, MURRAY S., M.D.
DAVIS, LINCOLN, M.D.
DENNY, FRANCIS P., M.D.
DeNORMANDIE, ROBERT L., M.D.
DERBY, RICHARD, M.D.
DICKINSON, ROBERT L., M.D.
DOWNING, ANDREW F., M.D.
DRINKER, CECIL K., M.D.
DUCKERING, FLORENCE W., M.D.
DUNN, CHARLES HUNTER, M.D.
EMMONS, ARTHUR B., 2d, M.D.
EUSTIS, RICHARD S., M.D.
FISKE, EBEN W., M.D.
FLOYD, CLEAVELAND, M.D.
FRIEDMAN, HENRY M., M.D.
GAY, GEORGE W., M.D.
GEORGE, ARIEL W., M.D.
GERBER, ISAAC, M.D.
GETCHELL, ALBERT C., M.D.
GILBRETH, FRANK B.
GODDU, LOUIS A. O., M.D.
GOLDTHWAIT, J. E., M.D.
GOLDWATER, S. S., M.D.
GOODALE, J. L., M.D.
GREELEY, HUGH P., M.D.
GREEN, ROBERT M., M.D.
GREGG, DONALD, M.D.
HALL, DAVID G., M.D.
HAMMOND, PHILIP M., M.D.
HARDWICK, ROSE S.
HARMER, TORR WAGNER, M.D.
HATCH, FLOYD F., M.D.
HAWES, JOHN B., 2d, M.D.
HEWES, H. F., M.D.
HILL, LEWIS W., M.D.
HONEIJ, JAMES A., M.D.
HOWARD, ARTHUR A., M.D.
HUBBARD, J. C., M.D.
HUNNER, GUY L., M.D.
HUNT, REID, M.D.
HUTCHINS, HENRY T., M.D.
JACKSON, HENRY, M.D.
JACKSON, JAMES MARSH, M.D.
KENDALL, ARTHUR I., Ph.D
KIMPTON, A. R., M.D.
LADD, W.E., M.D.
LAHEY, FRANK H., M.D.
LANE, C. G., M.D.
LARRABEE, RALPH C., M.D.

LEWIS, FREDERICK T., M.D.
LIND, J. E., M.D.
LINENTHAL, HARRY, M.D.
LOVETT, ROBERT W., M.D.
LOW, HARRY C., M.D.
LOWELL, HOLBROOK, M.D.
LUCE, DEAN S., M.D.
LYMAN, DAVID RUSSELL, M.D.
MARSHALL, HERMAN W., M.D.
McLAUGHLIN, ALLAN J., M.D.
McMECHAN, F. H., M.D.
MONKS, GEORGE H., M.D.
MORSE, JOHN LOVETT, M.D.
MURPHY, FRED T., M.D.
NEWBURGH, L. H., M.D.
NUTE, A. J., M.D.
OSGOOD, ROBERT B., M.D.
OTIS, EDWARD O., M.D.
PALMER, GEORGE T., M.D.
PARKER, G. H., M.D.
PARKER, WILLARD S., M.D.
PARKS, EDWARD L., M.D.
PARSONS, SARA E., R.N.
PENFIELD, WILDER G.
PFEIFFER, O. J., M.D.
PIPER, FRANK, M.D.
PORTER, P. BRYNBERG, M.D.
PORTER, W. T., M.D.
POST, ABNER, M.D.
PREBLE, WILLIAM E., M.D.
PRENN, JOSEPH, M.D.
PUTNAM, J. J., M.D.
PUTNAM, MRS. WM. LOWELL
REED, ALBERT C., M.D.
REED, FLORENCE M.
REID, WILLIAM DUNCAN, M.D.
RICHARDS, GEORGE L., M.D.
RILEY, A., M.D.
RISLEY, EDWARD H., M.D.
ROBBINS, WILLIAM BRADFORD, M.D.
ROBEY, WILLIAM H., Jr., M.D.
ROGERS, ORVILLE F., Jr., M.D.
SCUDDER, CHARLES L., M.D.
SHATTUCK, G. CHEEVER., M.D.
SHERRICK, JOSEPH L., M.D.
SMITH, OLIVER C., M.D.
SMITH, THEOBALD, M.D.
SMITH, WILLIAM DAVID, M.D.
SMITHWICK, M. P., M.D.
SOBOTKY, IRVING, M.D.
SOLOMON, H. C., M.D.
SOLOMON, MEYER, M.D.
SOUTHARD, E. E., M.D.
SOUTTER, ROBERT, M.D.
SPEAR, EDMUND D., M.D.
STEARNS, A. WARREN, M.D.
STEDMAN, HENRY R., M.D.
STORER, MALCOLM, M.D.
SWIFT, H. M., M.D.
SWIFT, JOHN B., Jr., M.D.
TALBOT, FRITZ B., M.D.
TAYLOR, E. WYLLYS, M.D.
TENNEY, BENJAMIN, M.D.
THORNDIKE, PAUL, M.D.
TRUESDALE, P. E., M.D.
TUTTLE, ALBERT H., M.D.
VICKERY, HERMAN F., M.D.
von ADELUNG, E., M.D.
WASHBURN, ELLIOTT, M.D.
WATSON, F. S., M.D.
WELLES, E. S.
WESSELHOEFT, WALTER, M.D.
WHITTEMORE, WYMAN, M.D.
WILLIAMS, FRANKWOOD E., M.D.
WILLIAMS, JOHN T., M.D.
WILSON, J. G., M.D.
WITHINGTON, CHARLES F., M.D.
WISTER, OWEN
WOLBACH, S. B., M.D.
WRIGHT, GEORGE H., M.D.
YOUNG, ERNEST BOYEN, M.D.
YOUNG, EDWARD L., Jr., M.D.

INDEX TO VOLUME CLXXII.

AUTHORS.

Abrahams, H. Suggestions in the employment of labor, 552.
Allen, F. M. The treatment of diabetes, 241.
Arkin, L. A case of autotransplantation of bone for nasal deformity due to syphilis, 672.
Armstrong, D. B. Occupational disease and the public health, 51.
Austin, A. E. Progress in biochemistry, 377. The clinical use of the water meal in determining the secretory and motile powers of the stomach, 857.

Balch, F. G. A report on some cases of perineal prostatectomy, 507
Bancroft, C. P. Some perils confronting state care of the insane, 247.
Bartlett, P. C. Progress in tuberculosis, 138.
Bates, Everett A. Annual discourse—some perplexities in modern medicine, 843.
Beckley, C. C. Border-line cases of mental defect, with special reference to hysterical symptoms, 510.
Berry, G. Labyrinthitis following operation for atresia, 700.
Bieberbach, W. D. Venereal disease and prostitution, 201.
Blaisdell, J. H. The menace of syphilis to the clean-living public, 476.
Boardman, M. T. The patriotic and humane service of the Red Cross nurse, 503.
Bowen, J. T. Report on dermatology, 709.
Bradford, E. H., and Soutter, R. On the fixation of fractured bones in infants and young children, 508.
Brickley, W. J., The relation of alcohol to accidents, 744.
Bryant, J. The carnivorous and herbivorous types of man, 321.
Bucholz, H., et al. Seventh report of progress in orthopedic surgery, 59, 97.
Bufford, J. H., and Lane, C. G. Cutaneous tuberculosis. Report of a case of folliclis and erythema induratum, 825.

Cabot, H. Some observation upon diverticulum of the bladder, 300; observations upon ten cases of diverticulum of the bladder, 365.
Cabot, R. C. James Gregory Mumford, M.D., 470.
Canavan, M. M. A study of normal-looking brains in psychopathic subjects, 124.
Chadwick, H. D. Treatment of tuberculous cervical adenitis, 5.
Chase, H. M., and Tenney, B. Mortality after prostatectomy based on a study of 229 fatal results, 437.
Cheever, D. W. The changed position of the profession of medicine, 473.
Christian, H. A. The starvation method versus gradual carbohydrate reduction as a time saver in the treatment of diabetes, 929.
Clap, E. W. Progress in ophthalmology, 21.
Clark, L. P. A study of the epilepsy of Dostojewsky, 46.
Cole, L. G., and George, A. W. The Roentgen diagnosis of gall-stones by improved methods, 326.
Cory, T. K. Suggestions in the employment of labor, 551.
Cotton, F. J. An undescribed ulnar nerve trouble due to tension from scar, and its cure, 480.
Coues, W. P. Thackeray's physicians, 302; The diagnosis and treatment of some rare fractures, 705.
Courtney, J. W. Some nervous affections in which massage deserves more frequent use, 483.
Crane, B. T. Remarks on the diagnosis and treatment of pulmonary tuberculosis, 433.
Crosbie, A. H. The field for local anesthesia and of spinal anesthesia in genito-urinary surgery, 260.
Crosbie, A. H., and Riley, A. Epididymotomy for epididymitis, as an out-patient procedure, 664.
Cutler, E. G. Water drinking. When shall we drink water? May we take it with meals? 925.

Dana, H. W. The treatment of pneumonia in children. Report of 104 consecutive cases, 58.
Danforth, M. S., et al. Seventh report of progress in orthopedic surgery, 59, 97; Eighth report of progress in orthopedic surgery, 448, 486.
Davis, L. A study of 260 cases of acute appendicitis at the Massachusetts General Hospital, 737; Two cases of rupture of intestine, 163.
DeNormandie, R. L., and Swift, J. B. Report on obstetrics, 590.
Derby, R. The care and treatment of the wounded in the European war, 693.
Dickinson, R. L. Hospital efficiency from the standpoint of a hospital surgeon, 775.
Downing, A. F. Syphilis and lung diseases, 898.
Drinker, C. K. John Halle: anatomiste, chirurgien, modernist, 575.
Duckering, F. W. Plastic surgery in procidentia with report of twenty-five cases, 292.
Dunn, C. H. Some studies in fat indigestion, 167; Thomas Morgan Rotch, M.D., 82.

Emmons, A. B. Care of prospective mothers, 618.
Eustis, R. S. The differentiation of human and cow's milk by color tests, 92.

Floyd, C. Tuberculosis in its relation to the handling of food, 549.

George, A. W., and Cole, L. G. The Roentgen diagnosis of gall-stones by improved methods, 326.
Getchell, A. C. Tuberculosis of the throat, 782.
Gilbreth, F. H. Hospital efficiency from the standpoint of the efficiency expert, 774.
Goddu, L. A. O. Enchondroma. A review of the literature of the subject with report of three cases operated upon by the author, 402.
Goldthwait, J. E. An anatomic and mechanistic conception of disease, 881.
Goldwater, S. S. Dispensaries: A growing factor in curative and preventive medicine, 613.
Goodale, J. L. The parenteral administration of horse serum in cases of horse asthma, 751.
Green, R. M. Corsets, ptosis and sacro-iliac strain, 587.
Gregg, D. Somatic characteristics of general paretics, 519.

Hammond, P. Parotid fistula following mastoid operation, 25.
Hardwick, R. S. Program and directions for the mental examination of asocial, psychopathic and doubtful subjects, 817, 861, 906, 935.
Harmer, T. W. A study of the efficiency of mixed toxins (Coley) in inoperable sarcoma. A critical analysis of 134 microscopically-proven cases, 331, 373, 411, 440.
Hatch, F. F. Progressive neuro-muscular atrophy (peroneal type of Charcot, Marie and Tooth): with report of three cases in a family without heredity, 393.
Hawes, J. B. Treatment of tuberculous cervical adenitis, 6; "Do's" and "don'ts" in the diagnosis of early pulmonary tuberculosis in adults and children, 731; The responsibility of the general practitioner for the care and supervision of the discharged sanatorium patient, 779.
Hawes, J. B., and Bartlett, P. C. Progress in tuberculosis, 138.
Hewes, H. F. A study of the stomach, 286, 338, 370, 406.
Hill, L. W., and Sherrick, J. L. Report on the Allen treatment of diabetes, 696.
Honeij, J. A. A study of leprosy; with especial reference to the pulse and temperature, 580, 629, 668.
Howard, A. A. Acidosis in children, 747.
Hubbard, J. C. A suggestion in the treatment of hemorrhagic disease of the new-born, 865.
Hunner, G. L. A rare type of bladder ulcer in women; report of cases, 660.
Hutchins, H. T. A few notes on the treatment of anteposed uteri, 18.

Jackson, J. M., and Smith, W. D. Lymphatic leukaemia in acute infection, after removal of the spleen, 136.

Kendall, A. I. The relation of bacteria to the etiology of summer diarrhea in young children, 851.
Kimpton, A. R. Gangrenous epiploic appendix, report of a case, 752.

Ladd, W. E. Modification of technic for hare-lip operation, 54.
Lahey, F. H. A water-tight ureteral catheter tip, 303.
Lane, C. G., and Bufford, J. H. Cutaneous tuberculosis, report of a case of folliclis and erythema induratum, 825.

Larrabee, R. C. A localized subacute form of broncho-pneumonia, 257.
Linenthal, H. A case of human rabies, 221; Dangers in handling food by persons afflicted with communicable diseases, 547.
Lovett, R. W. Percival Pott, his times and his work, 807.
Low, H. C., et al. Seventh report of progress in orthopedic surgery, 59, 97; Eighth report of progress in orthopedic surgery, 448, 486.
Lowell, H. Partial tenotomies by the Todd-Harmon method, 56.
Lyman, D. R. The tuberculosis work in Connecticut, its development in the last decade, and its future needs, 657.

Marshall, H. W. Late results of surgical treatments for flexed scapulae, with a discussion of the subject, 812.
McLaughlin, A. J. Dangers in handling food by persons afflicted with communicable diseases, 545; How the practising physician may aid the department of health, 769.
Monks, G. H. Experimental use of magnetism for locating needles in the tissues, a preliminary report, 285.
Morse, J. L., and Talbot, F. B. The bacteriology of the gastro-intestinal canal in infancy, a summary, 171.

Osgood, R. B., et al. Seventh report of progress in orthopedic surgery, 59, 97; Eighth report of progress in orthopedic surgery, 448, 486.
Otis, E. O. Communicable diseases and their relation to the handling of food; Introductory remarks, 544.

Palmer, G. T. Tuberculous infection as a disease entity, 904.
Parker, W. S. Urinary acidity and beta-oxybutyric acid determinations in recurrent vomiting, 164.
Porter, W. T. Charles Sedgwick Minot, M.D., 467.
Post, A. Dangers from syphilis, 550.
Preble, W. E. Obesity and malnutrition, 740.
Prenn, J. Sub-mucous resection as a means of obliterating superficial blood-vessels, 138.

Reed, A. C. Rabies in China, 901.
Reid, W. D. Myxedema simulating nephritis, 674.
Richards, G. L. Relation of the tonsils, adenoids and other throat conditions to tuberculous cervical adenitis, 1.
Riley, A., and Crosbie, A. H. Epididymotomy for epididymitis as an out-patient procedure, 664.
Risley, E. H. Skeletal cancer, 584; The pre-operative diagnosis of tubercular mesenteric and retroperitoneal glands, 253; Diabetes and surgery, 90.
Robbins, W. B. Charles Pickering Putnam, M.D., 84.
Robey, W. H. Renal infections, 217.
Rogers, O. F. A study of children with positive skin tuberculin reactions, 161.

Scudder, C. L. The significance of x-ray examination following operation for congenital pyloric tumor, 166.
Sherrick, J. L., and Hill, L. W. Report of the Allen treatment of diabetes, 696.
Smith, O. C. Differential diagnosis and indications for treatment of tumors of the neck, 208.
Smith, T. Scholarship in medicine, 121.
Smith, W. D., and Jackson, J. M. Lymphatic leukaemia in acute infection, after removal of the spleen, 136.
Smithwick, M. P. Posterior gastro-enterostomy by exact measure, 860.
Sobotky, I. The alcoholic injection of the internal branch of the superior laryngeal nerve, 96.
Solomon, H. C., and Wells, E. S. Varieties of the gold sol test (Lange) in several loci of the cerebro-spinal fluid system: a study of twenty-eight autopsied cases, 625; On the value of the gold sol test (Lange) in cerebro-spinal fluid obtained post-mortem, 398.
Southard, E. E., and Canavan, M. M. A study of normal-looking brains in psychopathic subjects, 124.
Soutter, R., and Bradford, E. H. On the fixation of fractured bones in infants and young children, 508.
Soutter, R., et al. Seventh report of progress in orthopedic surgery, 59, 97; Eighth report of progress in orthopedic surgery, 448, 486.
Stearns, A. W. Note on the recent extension of out-patient work in Massachusetts hospitals for the insane, 553.
Stedman, H. R. Report of progress in mental diseases, part I, 223; part II, 262.
Storer, M. On ovarian transplantation: with report of a case of implantation into the uterus with resulting pregnancy, 41.
Swift, H. M. Compensatory exercises as an aid in the treatment of locomotor ataxia, 85.
Swift, J. B., and DeNormandie, R. L. Report on obstetrics, 590.

Talbot, F. B., and Morse, J. L. The bacteriology of the gastro-intestinal canal in infancy. A summary, 171.
Tenney, B., and Chase, H. M. Mortality after prostatectomy based on a study of 229 fatal results, 437.
Thorndike, P. Recent progress in genito-urinary surgery, 786.
Truesdale, P. E. Splenic anemia with report of a case, 368.
Tuttle, A. H. A case of osteomyelitis with necrosis of the entire femur with spontaneous fracture treated by a high amputation, leaving a boneless yet practical stump for the attachment and working of an artificial limb, 589.

Vickery, H. F. Francis Bishop Harrington, M.D., 81.
von Adelung, E. A cheap electric heater, 171.

Washburn, E. The role of the state sanatorium in the tuberculosis problem, 429.
Watson, F. S. Report of a case of congenital multiple cystic disease of the kidneys in which one kidney was removed, 169; perforations of the stomach and intestines by foreign bodies that have been swallowed, 622.
Wells, E. S., and Solomon, H. C. On the value of the gold sol test (Lange) in cerebro-spinal fluid obtained post-mortem, 398; Varieties of the gold sol test (Lange) in several loci of the cerebro-spinal fluid system; a study of twenty-eight autopsied cases, 625.
Wesselhoeft, W. Hospital efficiency from the standpoint of hospital trustees, 778.
Whittemore, W. Acute and chronic empyema, 168.
Williams, F. E. Psychopathic hospitals and prophylaxis, 933.
Williams, J. T. Visceral ptosis. A review, 13.
Wister, O. Superstition and the doctor, 357.
Wolbach, S. B. Recovery from coccidioidal granuloma, 94.
Wright, G. H. Tuberculosis from a dentist's viewpoint, 8.

Young, E. L. A new preparation for pyelography, 539; Urethral caruncle, 822.
Young, E. B. The emergencies of extra-uterine pregnancy at the Boston City Hospital. An analysis of sixty-two cases, 131.

SUBJECTS.

Abnormal Blood Pressures, the significance of, 529.
Abortion, legalization of, in France, 604.
Alcoholic injection of the internal branch of the superior laryngeal nerve, Irving Sobotky, M.D., 96.
Allen Treatment of diabetes, Lewis W. Hill, M.D., and Joseph L. Sherrick, M.D., 696.
Ambulance construction commission, 198.
American College of Surgeons, 30; Examination for admission to, 39.
American Social Hygiene Association, 653.
Anemia, splenic: with report of a case, P. E. Truesdale, M.D., 368.
Anesthesia, the field for local and spinal in genito-urinary surgery, Arthur H. Crosbie, M.D., 260.
Anesthetists, Interstate Association of, 466.
Angell Memorial Hospital, 117.
Animal Experimentation, defence of in Boston, 651.
Anatomic and Mechanistic conception of disease, J. E. Goldthwait, M.D., 881.
Anatomy, action of the Association of Anatomists regarding college work in preparation for human, 229.
Announcement, 27, 385.
Annual Discourse, Some perplexities in modern medicine, Everett A. Bates, M.D., 843.
Anteposed Uteri, a few notes on the treatment of, Henry T. Hutchins, M.D., 18.
Anti-Toxin, prompt use of diphtheria, 348.
Antityphus vaccine, 645.
Anti-Vaccination arguments, 654.
Anti-Vivisection legislation, 310
Atresia, labyrinthitis following operation for, Gordon Berry, M.D., 700.
Autotransplantation of bone for nasal deformity due to syphilis, Louis Arkin, M.D., 672.

Bacteria, relation of to the etiology of summer diarrhea in young children, Arthur I. Kendall, 851.
Bacteriology of the gastro-intestinal canal in infancy, John Lovett Morse, M.D., and Fritz B. Talbot, M.D., 171.
Baldwin, Dr. Henry Cutler, memorial of, 426.
Bedlam and its physicians, 599.
Belgian Physicians' Relief fund, 38, 80, 120, 159, 199, 240, 283, 319, 356, 391, 427, 465, 501, 538, 572, 611, 655, 692, 728, 767, 805, 842, 880, 924.
Belgian Red Cross, 573; meeting for, 566.
Belgian Scholarship Committee, 573.
Bigelow, Henry Jacob medal and the Boston Surgical Society, 647.
Biochemistry, progress in, A. Everett Austin, M.D., 377.
Birth Rates, German, 607; French, 79.
Bladder, Ulcer of, a rare type in women; report of cases, Guy L. Hunner, M.D., 660.
Bladder, Diverticulum of, observations upon ten cases of, 365; Some observations upon, Hugh Cabot, M.D., 300.
Blood Pressure, during pregnancy, 267; Significance of abnormal, 529.
Bones, Fractured, On the fixation of in infants and young children, E. H. Bradford, M.D., and Robert Soutter, M.D., 508.
Book Reviews. Allen, Carroll W., local and regional anesthesia, 265; Asher, Philip, chemistry and toxicology for nurses, 65; Autenrieth, William, laboratory manual for the detection of poisons and powerful drugs, 830; Bacon, Charles Sumner, obstetrical nursing, 682; Bainbridge, William Seaman, the cancer problem, 755; Boyd, L. C., state registration of nurses, 913; Brill, A. A., psychanalysis: its theories and practical applications, 527; Buckley, L. Duncan, cancer, its cure and treatment, 943; Cammidge, P. J., the feces of children and adults, 943; Coulter, John Merle, evolution of sex in plants, 715; Crile, G. W., the origin and nature of the emotions, 913; Delorme, Edmond, precis de chirurgie de guerre, 943; Delafield, Francis and Prudden, T. Mitchell, a text-book of pathology, 145; Fitzwilliams, Duncan C. L., a nursing manual for nurses and nursing orderlies, 682; Freyberger, Ludwig, the pocket formulary for the treatment of disease in children, 830; Green, Charles M., case histories in diseases of women, including abnormalities of pregnancy, labor and puerperium, 790; Greene, Charles W., Kirke's handbook of physiology, 104; Heitzmann, L., urinary analysis and diagnosis of microscopic and chemical examination, 912; Hemenway, H. B., legal principles of public health administration, 913; Hewitt, C. Gordon, the house-fly, 867; Hoyt, Daniel M., practical therapeutics, 145; Huber, John Bessner, a doctor's viewpoint, 682; Infantile paralysis in Massachusetts, 1907—1912, 682; Jackson, C. M., human anatomy, 944; Jores, Leonhard, the commoner diseases, 791; Keen, William Williams, animal experimentation and medical progress, 26; Kenwood, Henry R., public health laboratory work, 562; Kolmer, John A., a practical text-book of infection, immunity and specific therapy, with special reference to immunologic technic, 641; Klotz, Oscar, and White, William Charles, papers on the influence of smoke on health, 642; Krause, Prof. Fedor, text-book of surgical operations, 641; Langstein, Leo, and Meyer, Ludwig F., infant feeding and infant metabolism, 26; Lejars, Felix, urgent surgery, 380; Lockhart-Mummery, P., diseases of the rectum and anus, 183; Lord, Frederick T., diseases of the bronchi, lungs and pleura, 641; Metheny, David Gregg, dissection methods and guides, 307; Meyrhead, W. A., practical tropical sanitation, 913; Morrow, Albert S., diagnostic and therapeutic technic, 598; Muller, A., text-book of massage, 642; Niemann, Albert, metabolism in the exudative diathesis, 562; Osler, William, and McCrae, Thomas, modern medicine, 791; Philadelphia General Hospital reports, 943; Polak, John Osborn, students' manual of gynecology, 944; Pope, Amy E., a medical dictionary for nurses, 65; Prentiss, Charles W., a laboratory manual and text-book of embryology, 642; Prince, Morton, the unconscious, 266; Robinson, William J., fewer and better babies, 942; Forty-sixth annual report of the secretary of state on the registration of births and deaths, and marriages and divorces in Michigan for the year 1912, 453; Rollier, Dr. A., the sun cure, 913; Ryerson, John G., a mind remedy, 183; Shafer, Sir Edward, an introduction to the study of the endocrine glands and internal secretions, 830; Quinn's elements of anatomy, 943; Sheffield, Herman B., the backward baby, 183; Smith, Emily A., the life and letters of Nathan Smith, M.B., M.D., 65; Sutherland, G. A., the heart in early life, 562; Thomson, William H., a treatise on clinical medicine, 65; Todd, J. C., clinical diagnosis, 912; Transactions of the National Association for the Study of Pellagra, 562; Underwood, Arthur S., aids to dental anatomy and physiology, 791; Wachenheim, F. L., infant feeding, 755; Woodwark, A. S., medical nursing, 682; Wright, Jonathan, a text-book of the diseases of the nose and throat, 491; Wyeth, John Allen, with sabre and scapel, 755.
Border-Line Cases of mental defect, with special reference to hysterical symptoms, Chester C. Beckley, M.D., 510.
Boston Board of Health, reorganization of, 231.
Boston Conference on illegitimacy, 872.
Boston Immigration Station, sanitary conditions at, 353.
Boston Quarantine Service, transfer of the, 29, 66, 76, 185, 495, 531.
Boston Surgical Society, 531; and the Henry Jacob Bigelow medal, 647.
Bovine Tuberculosis, the milk supply and, 871.
Brains, normal-looking in psychopathic subjects, E. E. Southard, M.D., and M. M. Canavan, M.D., 124.
British Red Cross hospitals, 77.
Broncho-Pneumonia, a localized subacute form of, Ralph C. Larrabee, M.D., 257.
Bullock, George Dexter, M.D., Memorial resolutions, 117.

Carrel, Dr., work of in France, 389.
Carnivorous and Herbivorous Types in human evolution, 346; in man, John Bryant, M.D., 321; An anatomic and mechanistic conception of disease, J. E. Goldthwait, M.D., 881; Physical types in the human being, 914.
California Climate and the treatment of tuberculosis, 878.
Cancer, skeletal, E. H. Risley, M.D., 584.
Caruncle, urethral, Edward L. Young, Jr., M.D., 822.
Cerebro-spinal Fluid. Varieties of the gold sol (Lange) in several loci of the cerebro-spinal fluid system: a study of twenty-eight autopsied cases, H. C. Soloman, and E. S. Welles, 625; On the value of the gold sol test (Lange) in cerebro-spinal fluid obtained post-mortem, H. C. Solomon, M.D., and E. S. Welles, 398.
China, medical education in, 461; The practise of medicine in, 67; A new era in Chinese medical education, 382; Rabies in, 901.
Chlorination of Public Water Supplies. Typhoid fever in the cities and towns of New York during the last decade, and disinfection by, 563.
Cinchona or Chinchona, 279.
Clerical Profession, cooperation with medical profession, 390.
Coccidioidal Granuloma, recovery from, S. B. Wolbach, M.D., 94.
Communicable Diseases, dangers in handling food by persons afflicted with, Allan J. McLaughlin, M.D., 545; Their relation to the handling of food, 544;

Introductory remarks, Edward O. Otis, M.D., 544; Dangers in handling food by persons afflicted with, Harry Linenthal, M.D., 547; Symposium on, 544.

Congenital Pyloric Tumor, 190; The significance of x-ray examination following operation for, Charles L. Scudder, M.D., 166.

Connecticut, Tuberculosis work in, D. R. Lyman, M.D., 657.

Contamination of lake waters, 157; of food with fecal matter, 150.

Co-operation of clerical and medical professions, 390.

Coronor, the proposed abolition of the office of in New York, 106.

Corpus Striatum, function of the, 424.

Correspondence. Inspection of out-of-state milk, C. J. Allen, M.D., 538; Prudential Hosp. Asso., Horace D. Arnold, M.D., 956; information about Dr. Smilie, "Assistant," 282; questions about the Harrison law, J. H. Averill, M.D., 427; field surgery on the Polish battle front, Bohm, 500; a misapprehension corrected, Vincent Y. Bowditch, M.D., 355; registration of nurses in Massachusetts, Walter P. Bowers, M.D., 281; potassium permanganate: its cooling effect upon the skin, John Bryant, M.D., 803; a misrepresentation corrected, Richard C. Cabot, M. D., 282; an olden-time nutrition laboratory, William Pearce Coues, M.D., 427; women physicians in medieval times, William Pearce Coues, M.D., 119; early pictures of acromegaly, William Pearce Coues, M.D., 159; the possible syphilitic origin of certain bladder ulcerations, William Pearce Coues, M.D., 767; a rejoinder, Samuel Crowell, M.D., 391; the clean milk bill, 923; tuberculosis and local boards of health, Francis George Curtis, M.D., 572; the Harvard unit at the American Ambulance in Neuilly, Paris, Harvey Cushing, M.D., 801; corsets, ptosis and sacro-iliac strain, Eben W. Fiske, M.D., 728; the treatment of drunkards who become public charges, George W. Gay, M.D., 355; the Roentgen diagnosis of pulmonary tuberculosis, Isaac Gerber, M.D., 282; patent medicines and quackery, Hugh P. Greeley, M.D., 465; personal and surgical cleanliness, Hugh P. Greeley, M.D., 237; corsets, ptosis and sacro-iliac strain, Robert M. Green, M.D., 804; American hospital of Paris, R. B. Greenough, M.D., 955; compulsory treatment for syphilis, David G. Hall, M.D., 841; questions about the Harrison law, Henry Jackson, M.D., 501; the labor clean milk bill, Dean S. Luce, M.D., 390; aftermath of the clean milk bill, Dean S. Luce, M.D., 841; an early investigator in anesthesia, F. H. McMechan, 239; the Harvard unit at the American Ambulance in Paris, Robert B. Osgood, M.D., 727; a misstatement corrected, G. H. Parker, M.D., 610; recreation for men in sanitaria, Edward L. Parks, M.D., 283; the employment of nurses suspended from training schools, Sara E. Parsons, R.N., 238; the American women's war hospital, Wilder G. Penfield, 691; the treatment of gunshot wounds of the lung, O. J. Pfeiffer, M.D., 766; surgical instruments for the Belgians, James J. Putnam, M.D., 119; surgical instruments for the European war, James J. Putnam, M.D., 391; the Changsha Yale Hospital, Alfred C. Reed, M.D., 805; the rehabilitation of the honorable pus-bug, "S," 317; typhoid fever in the western arena of war, "S." 499; the wounded on the French battle line, "S," 463; military deaths and funerals in Paris, "S," 765; French costume in war time, "S." 600; Belgian physicians' relief fund, F. F. Simpson, M.D., 283; Belgian physicians' relief fund, Howard C. Taylor, M.D., F. F. Simpson, M.D., 159; diagnosis first, treatment afterwards, Edmund D. Spear, M.D., 611; the naso-pharynx as a portal of entry for air-borne infections, Edmund D. Spear, M.D., 767; transfusion in the treatment of ruptured tubal pregnancy, Ernest B. Young, M.D., 317.

Corsets, ptosis, and sacro-iliac strain, Robert M. Green, M.D., 587.

Cosmetic Surgery, 948.

Crippled Soldiers, after-care of, 834.

Cultivation of drug plants in the United States, 922.

Cutaneous Tuberculosis. Report of a case of folliclis and erythema induratum, J. H. Bufford, M.D., and C. G. Lane, M.D., 825.

Cutter Lectures, 160.

Dental Registration in Massachusetts, 565.

Derby, Hasket, memorial resolutions, 354.

Dermatology, report on, John T. Bowen, M.D., 709.

Diabetes, report on the Allen treatment of, Lewis W. Hill, M.D., and Joseph L. Sherrick, M.D., 696; and surgery, Edward H. Risley, M.D., 90; treatment of, Frederick M. Allen, M.D., 241.

Diarrhea, the classification and diagnosis of, in bottle-fed infants, 345; the relation of bacteria to the etiology of, in young children, Arthur I. Kendall, 851.

Differentiation of human and cows' milk by color tests, Richard S. Eustis, M.D., 92.

Diphtheria Anti-Toxin, prompt use of, 348.

Disinfection of sewage from trains and steamers, 108.

Dispensaries: A growing factor in curative and preventive medicine, S. S. Goldwater, M.D., 613.

District Health Officers, salaries of, 457.

Diverticulum, some observations upon, of the bladder, Hugh Cabot, M.D., 300.

Drug Registration, 949.

Editorials. Announcement, 27; the tests for membership in the Massachusetts Medical Society, 27; ptosis in children, 28; proposed transfer of Boston quarantine service, 29; American College of Surgeons, 30; legislation on care of tuberculosis in Maine, 30; transfer of the Boston quarantine service, 66; the practise of medicine in China, 67; transplantation of tissues and organs, 69; health conditions in Boston in 1914, 69; an absurd medical bill, 70; hospital efficiency, 105; exercise in the treatment of tabes, 106; the proposed abolition of the office of coroner in New York, 106; the importance of the physical examination of those attendant upon infants, 108; disinfection of sewage from trains and steamers, 108; biologic aspects of early marriage, 146; the treatment of ruptured tubal pregnancy, 147; New York's new sanitary code, 148; admission to the Rutland State Sanatorium, 149; contamination of food with fecal matter, 150; Federal or local administration of maritime quarantine, 185; a career of professional and public service, 187; a hospital ship for deep sea-fisheries, 188; the nursing question, 189; congenital pyloric tumor, 190; action of the Association of Anatomists regarding college work in preparation for human anatomy, 229; reorganization of the Boston Board of Health, 231; prostitution and venereal disease, 231; Massachusetts State Health Department, 232; miscellaneous matters of medical legislation, 232; the blood-pressure during pregnancy, 267; eugenic legislation, 268; hospital quiet zones, 270; the local public health of summer resorts, 271; the labor clean milk bill, 308; local care of advanced tuberculosis, 309; anti-vivisection legislation, 310; immigration of the insane and mentally defective, 310; location of metallic substance in the tissues, 311; the classification and diagnosis of diarrhea in bottle-fed infants, 345; carnivorous and herbivorous types in human evolution, 346; operation of the Harrison Bill, 347; prompt use of diphtheria anti-toxin, 348; the failure of an important bill, 348; medical school number of the Harvard Alumni Bulletin, 349; the question of early marriage, 381; a new era in Chinese medical education, 382; the medical examination of transportation operators, 384; the importance of pregnancy care, 385; announcement, 385; harmonization of State and Federal narcotic laws, 417; familial diseases, 419; the Harvard expeditionary unit, 419; complimentary dinner to Dr. Theobald Smith, 420; the labor clean milk bill again, 454; factors in the duration of pulmonary tuberculosis, 455; the importance of rest in the treatment of Graves' Disease, 456; salaries of district health officers, 457; enforcement of law for local tuberculosis institutions, 457; new and non-official remedies, 1915, 492; health aspects of school lunches, 493; syphilis, 495; the question of quarantine transfer, 495; miscellaneous matters of medical legislation, 496; neurological hospitals, 528; the significance of abnormal blood pressures, 529; the seventh Pan-American Medical Congress, 531; Boston quarantine transfer, 531; the Boston Surgical Society, 531; typhoid fever in the cities and towns of New York during the last decade, and disinfection by chlorination of public water supplies in the state, 563; feeble-mindedness in Massachusetts, 564; dental registration in Massachusetts, 565; employment of patients in hospitals for the insane, 566; meeting for Belgian Red Cross, 566; Bedlam and its physicians, 599; importance of research in leprosy, significance of pulse rate in the disease, 601; golf ball accidents, 602; Dr. William Wallace Morland, an early editor of the Journal, 603; legalization of abortion in France, 604; public health administration in New York, 643; an antityphus vaccine, 645; the medical profession an agent for peace, 646; organized obstetric and prgenancy care in Massachusetts, 647; The Boston Surgical Society and the Henry Jacob Bigelow medal, 647; Judge Baker and the Juvenile Court, 683; proposed professorship of Psychiatry, 684; fly suppression, 685; proposed transfer of New York quarantine, 685; epidemic of streptococcus sore throat, 686; construction of local tuberculosis hospitals, 716; health conditions in Panama, 717; milk legislation in Massachusetts, 717; out-patient clinics for mental disease, 718; the heart muscle in pneumonia, 718; subtemporal decompression for the relief of cerebral spastic paralysis, 756; public health legislation in Rhode Island, 757; Acidosis in children, 758; the early diagnosis of tuberculosis, 759; expert advice disregarded 760; health conditions in Belgium, 760; hospital efficiency, 792; recent ideas on ventilation, 793; the veto of the clean milk bill, 794; complimentary dinner to Dr. Theobald Smith, 795; volunteers for the Harvard Surgical Unit, 795; the work of the public Health Council of New York State, 831; the production of eminent men, 833; the nature of stuttering 834; after-care of crippled soldiers, 834; the control of occupational diseases, 868; four important recent legal decisions, 869; the milk supply and bovine tuberculosis, 871; Boston conference on illegitimacy, 872; complimentary dinner to Dr. Theobald Smith, 873; physical types in the human being, 914; injection of the spheno-palatine ganglion, 915; does insanity ever follow operation? 916; Massachusetts medical society, 916; an operating room on wheels, 917; construction of local tuberculosis hospitals, 917; some of the work under the Thomas Thompson trust, 945; the prophylaxis of feeble-mindedness, 947; venereal prophylaxis, 947; a new field for American medical writers, 948; more cosmetic surgery, 948; drug registration, 949.

Early Marriage, biologic aspects of, 146; the question of, 381.
Eminent Men, production of, 833.
Employment of Labor, suggestions in the, Henry Abrahams, 552; T. K. Cory, 551.
Employment of Patients in hospitals for the insane, 566.
Empyema, acute and chronic, Wyman Whittemore, M.D., 168.
Enchondroma. Review of the literature of the subject with report of three cases, Louis A. O. Goddu, M.D., 402.
Epididymitis, epididymotomy for, as an out-patient procedure, A. H. Crosbie, M.D., and A. Riley, M.D., 664.
Epilepsy of Dostojewsky, a study of, L. Pierce Clark, M.D., 46.
Extra-Uterine Pregnancy, emergencies of, at the Boston City Hospital, Ernest Boyen Young, M.D., 131.
Eugenic legislation, 268.
European War, the care and treatment of the wounded in, Richard Derby, M.D., 693. After-care of Crippled soldiers, 834. An operating room on wheels, 917.

Familial diseases, 419.
Fat Indigestion, some studies in, Charles Hunter Dunn, M.D., 167.
Feeble-Mindedness in Massachusetts, 564.
Fisher, Theodore Willis, M.D., memorial resolutions, 117.
Flexed Scapulae, late results of surgical treatments for, with a discussion of the subject, Herman W. Marshall, M.D., 812.
Fly Suppression, 685.
Foreign Bodies, perforations of stomach and intestines by, F. S. Watson, M.D., 622.
Fractures, diagnosis and treatment of rare, Wm. Pearce Coues, M.D., 705; on the fixation of, in infants and young children, E. H. Bradford, M.D., and Robert Soutter, M.D., 508.
French Birth Rate, 79.

Gall-Stones, roentgen diagnosis of, by improved methods, Lewis Gregory Cole, M.D., and Arial W. George, M.D., 326.
Gastro-Enterostomy, posterior, by exact measure, M. P. Smithwick, M.D., 860.
General Paretics, somatic characteristics of, Donald Gregg, M.D., 519.
Genito-Urinary Surgery, the field for local anesthesia and of spinal anesthesia in, Arthur Hallam Crosbie, M.D., 260.
German medical efficiency, 654; birth-rate, 607; medical contributions by, military surgeons, 879.
Golf Ball accidents, 602.
Gold Sol Test, on the value of, in cerebrospinal fluid obtained post-mortem, H. C. Solomon, M.D., and E. S. Welles, M.D., 398; varieties of, in several loci of the cerebrospinal fluid system: a study of twenty-eight autopsied cases, H. C. Solomon, and E. S. Welles, 625.
Graves' Disease, the importance of rest in the treatment of, 456.
Gunshot Wounds, unusual, 571.

Halle, John: Anatomiste, chirugien, modernist, Cecil K. Drinker, M.D., 575.
Hare-Lip Operation, modification of technic for, W. E. Ladd, M.D., 54.
Harrington, Francis Bishop, M.D., Herman F. Vickery, M.D., 81.
Harrison Bill, operation of the, 347.
Harvard Alumni Bulletin, medical school number of, 349.
Harvard Expeditionary Unit, 419.
Heath Conditions in Boston in 1914, 69.
Health Officers, school for, 158.
Hemorrhagic Disease of the newborn, a suggestion in the treatment of, J. C. Hubbard, M.D., 865.
Hospital Efficiency, 105.
Hospital Quiet Zones, 270.
Hospital Ship for deep-sea fisheries, 188.

Iatro-Chemical and Iatro-Physical Sects, 571.
Illegitimacy, Boston conference on, 872.
Immigration of the insane and mentally defective, 310.
Immigration Bill, amendments in, which relate to exclusion and deportation of insane and mentally defective immigrants, 313.
Infants, the classification and diagnosis of diarrhea in bottle-fed, 345.
Insane, immigration of, 310; immigration bill relating to, 313; some perils confronting state care of the, Charles P. Bancroft, M.D., 247.
Insane Hospitals, employment of patients in, 566.
Insanity in Massachusetts, 198; does it ever follow operation? 916.
Intestines, perforations of, by foreign bodies that have been swallowed, F. S. Watson, M.D., 622; rupture of, Lincoln Davis, M.D., 163.
Interstate Association of anesthetists, 466.
Intravenous Medication in the seventeenth century, 119.

Judge Baker and the Juvenile Court, 683.

Kidney, multiple cystic disease of, report of a case, in which one kidney was removed, Francis S. Watson, M.D., 169.

Labor Clean Milk Bill, 308, 454, 764, 840.
Labyrinthitis following operation for atresia, Gordon Berry, M.D., 700.
Legalization of Abortion in France, 604.
Legislation on care of tuberculosis in Maine, 30. (See medical legislation).
Leprosy, a study of, with especial reference to the pulse and temperature, James A. Honeij, M.D., 580, 629, 668; importance of research in. Significance of pulse rate in the disease, 601.
Locomotor Ataxia, compensatory exercises as an aid in the treatment of, H. M. Swift, M.D., 85.
Lung Disease, Syphilis and, A. F. Downing, M.D., 898.
Lymphatic Leukaemia, in acute infection, after removal of the spleen, James Marsh Jackson, M.D., and William David Smith, M.D., 136.

Magnetism, experimental use of for locating needles in the tissues. George H. Monks, M.D., 285.
Maine, legislation on care of tuberculosis in, 30.
Massachusetts Society for Mental Hygiene, 78.
Massachusetts State Health Department, 232; the failure of an important bill of, 348; regulations of, 197.
Massachusetts Medical Society. Annual meeting of the supervisors, 952; annual discourse, 843; annual meeting, 724, 916; the annual meeting of the American Medical Association in San Francisco, June 21 to 25, 1915, 689; Dorchester Medical Society, 724; Franklin District Medical Society, 153; Hampshire District Medical Society, 607; Middlesex East District Medical Society, 922; Plymouth District Medical Society annual meeting, 570; program of the 134th anniversary, 837; Shattuck lecture, 881; social service institutes, 799; stated meeting of the council, February 3, 1915, 275.
Massage. Some nervous affections in which massage deserves more frequent use, J. W. Courtney, M.D., 483.
McCollom, John H., M.D., a career of professional and public service, 187.
Medical Association of the Isthmian Canal Zone, 40.
Medical Education in China, 382.
Medical Examination of transportation operators, 384.
Medical Profession an agent for peace, 646; cooperation with clerical profession, 390.
Medical Legislation, miscellaneous matters of, 70, 232, 496; on care of tuberculosis in Maine, 30; four important recent legal decisions, 869.
Medical Progress. Ophthalmology, E. W. Clap, M.D., 21; orthopedic surgery, seventh report, R. B. Osgood, M.D., et al., 59, 97; eighth report, R. B. Osgood, M.D., et al., 448, 486; tuberculosis, J. B. Hawes, M.D., and P. C. Bartlett, M.D., 138; pediatrics, J. L. Morse, M.D., and F. B. Talbot, M.D., 171; mental diseases, H. R. Stedman, M.D., Part I, 223; Part II, 262; biochemistry, A. E. Austin, M.D., 377; obstetrics, R. L. DeNormandie, M.D., and J. B. Swift, M.D., 590; dermatology, J. T. Bowen, M.D., 709; genito-urinary surgery, Paul Thorndike, M.D., 786.
Medical Writers, American, a new field for, 948.
Medicine, the changed position of the profession of, David W. Cheever, M.D., 473.
Memorial Resolutions, Charles Sedgwick Minot, M.D., 116; Theodore Willis Fisher, M.D., 117; George Dexter Bullock, M.D., 117; James Gregory Mumford, 354; Hasket Derby, M.D., 354; Henry Walter Wood, M.D., 655.
Mental Diseases, report of progress in, Part I, Henry R. Stedman, M.D., 223; Part II, 262.
Mental Defect, border-line cases of, with special reference to hysterical symptoms, Chester C. Beckley, M.D., 510.
Mental Defectives, immigration of, 310; immigration bill relating to, 313.
Mental Examination. Program and directions for the mental examination of asocial, psychopathic and doubtful subjects, Rose S. Hardwick, 817, 861, 906, 935.
Mental Hygiene, Massachusetts Society for, 78.
Metallic Substances, location of, in the tissues, 311.
Military Nostalgia, 39.
Milk legislation and investigation in Massachusetts, 534; Differentiation of human and cow's milk by color tests, Richard S. Eustis, M.D., 92; Labor clean milk bill, 308, 454, 840; the milk supply and bovine tuberculosis, 871.
Minot, Charles Sedgwick, M.D., W. T. Porter, M.D., 467
Miscellaneous Matters of Medical Legislation, 70, 232, 496.

Miscellany. Belgian physicians' relief fund, 38; military nostalgia, 39; examination for admission to American College of Surgeons, 39; the medical association of the Isthmian Canal zone, 40; United States civil service examination, 40; the transfer of the quarantine station, 76; British Red Cross hospitals, 77; Massachusetts Society for Mental Hygiene, 78; the French birth-rate, 79; Belgian physicians' relief fund, 80; memorial resolutions, 116; Charles Sedgwick Minot, M.D., 116; Theodore Willis Fisher, M.D., 117; George Dexter Bullock, M.D., 117; Angell memorial hospital, 117; Larrey at Waterloo, 118; intravenous medication in the seventeenth century, 119; changes in the Medical Corps, U. S. Navy, 119; Belgian physician's relief fund, 120; contamination of lake waters, 157; school for health officers, 158; the Cutter lectures, 160; regulations of State Department of Health, 197; the ambulance construction commission, 198; insanity in Massachusetts, 198; examination of candidates for assistant surgeon, 199; Belgian physicians' relief fund, 199; Philippine civil service examinations, 239; Belgian physicians' relief fund, 240; the health of York, 279; cinchona or chinchona, 279; amendments in the immigration bill which relate to exclusion and deportation of insane and mentally defective immigrants, 313; early history and suppression of the opium traffic, 315; naval surgery a century ago, 316; Belgian physicians' relief fund, 319; changes in the Medical Corps, U. S. Navy, 319; sanitary conditions at the Boston immigration station, 363; memorial resolutions, 354; Belgian physicians' relief fund, 356; work of Dr. Carrel in France, 389; cooperation of clerical and medical professions, 390; Belgian physicians' relief fund, 391; medical extracts for seventeenth century letters, 423; the function of corpus striatum, 424; investigation of poliomyelitis in Vermont, 425; memorial of Dr. Henry Cutler Baldwin, 425; Belgian physicians' relief fund, 427; medical education in China, 461; changes in the Medical Corps, U. S. Navy, 465; Belgian Physician's relief fund, 465; Interstate Association of Anesthetists, 466; United States civil service examination, 466; Belgian physicians' relief fund, 501; milk legislation and investigation in Massachusetts, 534; venereal diseases in the United States Navy, 536; Belgian physicians' relief fund, 538; unusual gunshot wounds, 571; the iatro-chemical and iatro-physical sects, 571; Belgian physicians' relief fund, 572; Belgian scholarship committee, 573; Belgian Red Cross, 573; the German birth-rate, 607; changes in the Medical Corps, U. S. Navy, 611; Belgian physicians' relief fund, 611; defence of animal experimentation in Boston, 651; tuberculosis "remedies" that are worthless, 652; American Social Hygiene Association, 653; German medical efficiency, 654; some anti-vaccination arguments, 654; memorial resolutions, 655; Belgian physicians' relief fund, 655; aid for the Belgian physicians, 655; pregnancy clinics, 690; a simple trap for the house fly, 691; Belgian physicians' relief fund, 692; state medical examination in the seventeenth century, 725; sanitary improvement in oysters, 726; memorial resolutions. Henry Cutler Baldwin, M.D., 726; Belgian physicians' relief fund, 728; United States civil service examinations, 729, triennial meeting of the Harvard Medical Alumni Association, 764; veto of the clean milk bill, 799; American Academy of Medicine, 801; aftermath of the clean milk bill, 840; the California climate and the treatment of tuberculosis, 878; medical contributions by German military surgeons, 879; the cultivation of drug plants in the United States, 922.

Mixed Toxins, a study of the efficiency of (Coley) in inoperable sarcoma. A critical analysis of 134 microscopically proven cases, Torr Wagner Harmer, M.D., 373, 411, 440.

Modern Medicine, some perplexities in, Everett A. Bates, M.D., 843.

Morland, Dr. William Wallace, an early editor of the Journal, 603

Mumford, James Gregory, M.D., Richard C. Cabot, M.D., 470; memorial resolutions, 354.

Myxedema simulating nephritis, William Duncan Reid, M.D., 674.

Narcotic Laws, harmonization of state and federal, 417.

Nasal Deformity, autotransplantation of bone for, Louis Arkin, 672.

Naval Surgery a century ago, 316.

Nephritis, myxedema simulating, William D. Reid, M.D., 674.

Neurological hospitals, 528.

Neuro-Muscular Atrophy, progressive (peroneal type of Charcot, Marie and Tooth): with report of three cases in a family without heredity, Floyd F. Hatch, 393.

New and Non-Official Remedies, 1915, 492.

New Instrument. A cheap electric heater, Edward von Adelung, M.D., 171; a water-tight ureteral catheter tip, Frank H. Lahey, M.D., 303.

New York, new sanitary code of, 148; public health administration in, 643; proposed transfer of quarantine, 685; typhoid fever in cities and towns of during the last decade, and disinfection by chlorination of public water supplies in the state, 563; the work of the public health council, 831.

Nurse, Red Cross, patriotic and humane service of, Miss Mabel T. Boardman, 503.

Nursing Question, 189.

Obituaries. Dudley P. Allen, M.D., 157; Henry Cutler Baldwin, M.D., 388; Thomas Bryant, F.R.C.S., M.Ch., M.D., 279; Sir Thomas Smith Clouston, M.D., 651; Edward Russell Cogswell, M.D., 38; Lieut.-Col. Charles Dalton, M.D., 878; William Murray Dobie, M.D., 534; James Brainerd Field, M.D., 651; Michael Freebern Gavin, M.D., 840; Albert van Gehuchten, M.D., 115; Sir William Richard Gowers, M.D., F.R.C.P., F.R.S. 877; Samuel Wood Langmaid, M.D., 422; Friedrich Loeffler, M.D., 724; John Hildreth McCollom, M.D., 953; Right Hon. Sir George Turner, F.C.M.G., M.D., LL.D., 461; Emery Lincoln White, M.D., 725.

Obstetrics. Report on obstetrics, Robert L. DeNormandie, M.D., and John B. Swift, M.D., 590; organized obstetric and pregnancy care in Massachusetts, 647

Occupational Disease and the public health, Donald B. Armstrong, M.D., 51; control of, 868.

Ophthalmology, progress in, Edmund W. Clap, M.D., 21.

Opium Traffic, early history and suppression of, 315.

Orthopedic Surgery, seventh report of progress in, Robert B. Osgood, M.D., Robert Soutter, M.D., Hermann Bucholz, M.D., Harry C. Low, M.D., Murray S. Danforth, M.D., 59, 97; eighth report of progress in, Robert B. Osgood, M.D., Robert Soutter, M.D., Hermann Bucholz, M.D., Harry C. Low, M.D., Murray S. Danforth, M.D., 448, 486.

Osteomyelitis, a case of with necrosis of the entire femur with spontaneous fracture treated by a high amputation, leaving a boneless yet practical stump for the attachment and working of an artificial limb, Albert H. Tuttle, M.D., 589.

Out-Patient Work, note on the recent extension of in Massachusetts hospitals for the insane, A. Warren Stearns, M.D., 553.

Ovarian Transplantation with report of a case of implantation into the uterus with resulting pregnancy, Malcolm Storer, M.D., 41.

Pan-American Medical Congress, the seventh, 531.

Parotid Fistula following mastoid operation, Philip Hammond, M.D., 25.

Perforations of the stomach and intestines by foreign bodies that have been swallowed, F. S. Watson, M.D., 622.

Pre-Operative Diagnosis of tubercular mesenteric and retroperitoneal glands, Edw. H. Risley, M.D., 253.

Perineal Prostatectomy, report on some cases of, F. G. Balch, M.D., 507.

Philippine civil service examinations, 239.

Physical Examination, the importance of the, to those attendant upon infants, 108.

Physical Types in the human being, 914.

Plastic Surgery in procidentia with report of 25 cases, Florence W. Duckering, M.D., 292.

Pneumonia, the treatment of in children. Report of 104 consecutive cases, Harold W. Dana, M.D., 58.

Poliomyelitis, investigation of in Vermont, 425.

Posterior Gastro-Enterostomy, by exact measure, M. P. Smithwick, M.D., 860.

Pott, Percival, his times and his work, Robert W. Lovett, M.D., 807.

Pregnancy Care, the importance of, 385; organized obstetric and pregnancy care in Massachusetts, 647; care of prospective mothers, A. B. Emmons, 2nd, M.D., 618.

Procidentia, plastic surgery in, with report of 25 cases, Florence W. Duckering, M.D., 292.

Production of Eminent Men, 833.

Profession of Medicine, changed position of, David W. Cheever, M.D., 473.

Professorship, proposed of psychiatry, 684.

Progressive Neuro-Muscular Atrophy (peroneal type of Charcot, Marie and Tooth): with report of three cases in a family without heredity, Floyd F. Hatch, M.D., 393.

Prophylaxis, the, of feeble-mindedness, 947.

Prospective Mothers, care of, Arthur B. Emmons, 2nd, M.D., 618. (See pregnancy care).

Prostatectomy, mortality after, based on a study of 229 fatal results, Benjamin Tenney, M.D., and Henry M. Chase, M.D., 437; a report of some cases of perineal, F. G. Balch, M.D., 507.

Prostitution and venereal disease, 231.

Psychiatry, proposed professorship of, 684.

Psychopathic Hospitals and prophylaxis, Frankwood E. Williams, M.D., 933.

Psychopathic Subjects, normal-looking brains in, E. E. Southard, M.D., and M. M. Canavan, M.D., 124; program and directions for the mental examination of, Rose S. Hardwick, 817, 861, 906, 935.

Ptosis in children, 28; corsets and sacro-iliac strain, Robert M. Green, M.D., 587; visceral, a review, John T. Williams, M.D., 13.

Public Health, local of summer resorts, 271; health of York, Me., 279; administration in New York, 643; school for health officers, 158; the work of the public health council of New York State, 831.

Pulmonary Tuberculosis see tuberculosis.

Putnam, Charles Pickering, M.D., W. E. Robbins, M.D., 84.

Pyelography, a new preparation for, Edward L. Young, Jr., 539.

Pyloric Tumor, congenital, 190; the significance of x-ray examination following operation for, Charles L. Scudder, M.D., 166.

Quarantine Transfer, the question of Boston, 495; federal or local administration of maritime quarantine, 185, 29, 66, 76, 531.

Rabies, a case of human, Harry Linenthal, M.D., 221; in China, A. C. Reed, 901.

Recurrent Vomiting, urinary acidity and beta-oxy-butyric acid determinations in, Willard S. Parker, M.D., 164.

Red Cross, nurse, patriotic and humane service of the, Miss Mabel T. Boardman, 503; British hospitals, 77; Belgian, 573; meeting for, 566.

Renal Infections, William H. Robey, Jr., M.D., 217.

Roentgen, diagnosis of gall-stones by improved methods, L. G. Cole, M.D., and Ariel W. George, M.D., 326. (See x-ray).

Rotch, Thomas Morgan, M.D., C. H. Dunn, M.D., 82.

Rupture of Intestine, two cases of, Lincoln Davis, M.D., 163.

Ruptured Tubal Pregnancy, treatment of, 147.

Rutland State Sanatorium, admission to, 149.

Sacro-Iliac Strain, corsets, ptosis and, Robert M. Green, M.D., 587.

Sanatoriums, state, role of, in tuberculosis problem, Elliott Washburn, M.D., 429; enforcement of law for local tuberculosis, 457; construction of local, 917.

Scapulae, Flexed, late results of surgical treatments for, with a discussion of the subject, Herman W. Marshall, M.D., 812.

Scholarship in medicine, Theobald Smith, M.D., 121.

School for health officers, 158.

School Lunches, health aspects of, 493.

Seventeenth Century Letters, medical extracts from, 423.

Sewage, disinfection of from trains and steamers, 108.

Shattuck Lecture, an anatomic and mechanistic conception of disease, J. E. Goldthwait, M.D., 881.

Smith, Dr. Theobald, complimentary dinner to, 420, 873.

Social Service institutes, 799.

Society Reports. American Association of Immunologists, meeting of June 22, 1914, 555; American Urological Association, fall meeting of the New England branch, November 30, 1914, 676; Boston Dispensary, one hundred and eighteenth annual meetig, held January 21, 1915, 638; The Boston Surgical Society, meeting of February 1, 1915, 522, meeting of March 1, 1915, 638; Carney Hospital clinical meeting, 911; the College of Physicians of Philadelphia, meeting of November 4, 1914, 178, meeting of November 23, 1914, 304, meeting of December 14, 1914, 452, meeting of January 6, 1915, 525, meeting of February 3, 1915, 825; Massachusetts Medical Society, (See Massachusetts Medical Society heading.); Neurological Institute, clinical conference of, meeting of February 25, 1915, 828, meeting of November 12, 1914, 175, meeting of January 21, 1915, 341, meeting of March 25, 1915, 939; New England Otological and Laryngological Society, meeting of January 19, 1915, 714; New England Pediatric Society, meeting of October 23, 1914, 102; meeting of December 4, 1914, 180; meeting of January 20, 1915, 752; the Philadelphia County Medical Society, meeting of November 25, 1915, 142; meeting of November 11, 1914, 63; the Suffolk District Medical Society, meeting of the surgical section, held Jaunary 6, 1915, 789.

Spheno-Palatine Ganglion, injection of, 915.

Spinal Anesthesia, the field for in genito-urinary surgery, Arthur H. Crosbie, M.D., 260.

Spleen, lymphatic leukemia in acute infection, after removal of, James M. Jackson, M.D., and W. D. Smith, M.D., 136.

Splenic Anaemia with report of a case, P. E. Truesdale, M.D., 368.

Starvation Method versus gradual carbohydrate reduction as a time saver in the treatment of diabetes, Henry A. Christian, M.D., 929.

State Department of Health, regulations of, 197; health department, 232; failure of an important bill, 348.

State Sanatorium, the role of the, in the tuberculosis problem, Elliott Washburn, M.D., 429.

Stomach, a study of disturbances of, H. F. Hewes, M.D., 286, 338, 370, 406; perforations of by foreign bodies that have have been swallowed, F. S. Watson, M.D., 622, the clinical use of the water meal in determining the secretory and motile powers of, A. Everett Austin, M.D., 857.

Streptococcus Sore Throat, epidemic of, 686.

Stuttering, the nature of, 834.

Sub-Mucous Resection as a means of obliterating superficial blood-vessels, Joseph Prenn, M.D., 138.

Superstition and the doctor, Owen Wister, 357.

Symposium on tuberculous cervical adenitis, 1.

Syphilis, 495; the menace of to the clean-living public, J. Harper Blaisdell, M.D., 476; dangers from, Abner Post, M.D., 550; and lung disease, Andrew F. Downing, M.D., 898.

Tabes, exercise in the treatment of, 106.

Thackeray's physicians, William Pearce Coues, M.D., 302.

Thomas Thompson Trust, some of the work under the, 945.

Todd-Harmon Method, partial tenotomies by, Holbrook Lowell, M.D., 56.

Tonsils, adenoids, relation of and other throat conditions to tuberculous cervical adenitis, George L. Richards, M.D., 1,

Transplantation of tissues and organs, 69; ovarian transplantation, 41.

Tubal Pregnancy, ruptured, treatment of, 147.

Tuberculin skin reactions, a study of children with, Orville F. Rogers, Jr., M.D., 161.

Tuberculosis, legislation on care of, in Maine, 30; "remedies" that are worthless, 652; from a dentist's viewpoint, George H. Wright, D.M.D., 8; in its relation to the handling of food, Cleaveland Floyd, M.D., 549; progress in, John B. Hawes, 2nd, M.D., and P. Challis Bartlett, M.D., 138; remarks on the diagnosis and treatment of pulmonary tuberculosis, Bayard T. Crane, M.D., 433; factors in the duration of pulmonary, 455; work in Connecticut, its development in the last decade, and its future needs, D. R. Lyman, M.D., 657; local care of advanced, 309; enforcement of law for local institutions, 457; bovine and milk supply, 871; the California climate and the treatment of, 878; cutaneous, report

of a case of folliclis and erythema induratum, J. H. Bufford, M.D., and C. G. Lane, M.D., 825; role of the state sanatorium in the problem, Elliott Washburn, M.D., 429; hospitals, construction of, 917.
Tuberculous Cervical Adenitis, symposium on, 1; relation to the tonsils, adenoids and other throat conditions to, George L. Richards, M.D., 1; treatment of, Henry D. Chadwick, M.D., 5; treatment of, John B. Hawes, 2d, M.D., 6; from a dentist's viewpoint, George H. Wright, D.M.D., 8.
Tuberculous Infection as a disease entity, G. T. Palmer, M.D., 904.
Tumors, of the neck, differential diagnosis and indications for treatment of, Oliver C. Smith, M.D., 208.
Typhoid Fever in the cities and towns of New York during the last decade, and disinfection by chlorination of public water supplies in the state, 563.
Typhus Fever, an antityphus vaccine, 645.

Ulnar Nerve Trouble, undescribed, due to tension from scar, and its cure, F. J. Cotton, M.D., 480.
United States civil service examination, 40; navy, venereal diseases in, 536.
Urethral caruncle, Edward L. Young, Jr., M.D., 822; catheter tip, a water-tight, Frank H. Lahey, M.D., 303.

Venereal Disease and prostitution, Walter D. Bieberbach, M.D., 201, 231; in the United States navy, 536; venereal prophylaxis, 947.
Vomiting, Recurrent, urinary aciditiy and beta-oxybutyric acid determination in, Willard S. Parker, M.D., 164.

Water Drinking. When shall we drink water? May we take it with meals? Elbridge G. Cutler, M.D., 925.
Water Meal, the clinical use of in determining the secretory and motile powers of the stomach, A. Everett Austin, M.D., 857.
Wood, Henry Walton memorial resolutions, 655.

X-Ray, the significance of, following operation for congenital pyloric tumor, Charles L. Scudder, M.D., 166. (See Roentgen).
York, the health of, 279.

HARVARD COLLEGE LIBRARY
JAN 7 1915

THE BOSTON
Medical and Surgical
JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

OL. CLXXII
o. 1
THURSDAY, JANUARY 7, 1915.
Single Copies 15 Cents
Five Dollars per Annum

IMPORTANT ANNOUNCEMENT

On January 1, 1915, the contract between the owners of the Boston Medical and Surgical Journal and the publisher, Mr. W. M. Leonard, terminated and a new method of management began. On the same date Dr. E. W. Taylor retired from the office of Editor-in-Chief.

The Journal has been incorporated under the laws of Massachusetts as a charitable institution and the business management is to be in the hands of Mr. Ernest Gregory, who will give his entire time to the Journal, acting for the incorporators, and having the benefit of Mr. Leonard's advice as consulting manager.

The editorial department, which has been reorganized with the approval of the Advisory Committee, will consist of the following physicians: Dr. Robert M. Green, Editor-in-Chief, Dr. Walter L. Burrage and Dr. Frederick T. Lord, acting for The Massachusetts Medical Society. Dr. Walter B. Cannon, Dr. Harvey Cushing, Dr. David L. Edsall, Dr. Reid Hunt, Dr. Roger I. Lee, Dr. Allan J. McLaughlin, Dr. Robert B. Osgood, Dr. M. J. Rosenau, Dr. E. C. Streeter and Dr. E. W. Taylor constitute the Consulting Editorial Board. The Advisory Committee remains the same, Dr. W. P. Bowers of Clinton, Dr. Homer Gage of Worcester, Dr. Lyman A. Jones of North Adams, Dr. Alfred Worcester of Waltham, Dr. Joel E. Goldthwait, Dr. E. C. Streeter, Dr. Hugh Williams, Dr. Robert B. Osgood, Secretary.

The office of the Journal has been moved to the Farragut Building, 126 Massachusetts Avenue, corner of Boylston Street.

The number of advertising pages has been reduced for the present, resulting in an elimination of nearly one-half the total former advertising matter. It is the intention to establish a standard in this department of the Journal's work, which will be beyond criticism.

It is hoped, by this reorganization, which places the business affairs of the Journal entirely in the hands of the medical profession, that a maximum degree of efficiency may be secured, and that associations which adopt the Journal as their mouthpiece may be more adequately served than heretofore. The Editors and Incorporators will always be grateful for criticisms and suggestions looking toward a greater usefulness of the Journal to the medical organizations of the country.

Hugh Williams, M.D., *President*
Edward C. Streeter, M.D., *Secretary*
Joel E. Goldthwait, M.D., *Treasurer*
Robert B. Osgood, M.D.
E. W. Taylor, M.D.
Robert M. Green, M.D.
Ernest Gregory

Incorporators of the Boston Medical and Surgical Journal Society (Inc.)

W. B. SAUNDERS COMPANY

Entered at the Post-office at Boston as second-class matter

CHRONIC CONSTIPATION

Treat your long-standing, obstinate cases, which resist cathartics, by internal lubrication with

AROMATIC LIQUID ALBOLENE

a method which originated in the United States and is to-day approved by the leading European specialists.

Complete literature on application

McKESSON & ROBBINS
91-97 FULTON STREET - - - NEW YORK

Tablets
5 grains, bottles of one hundred and boxes of ten

Powder
In one-ounce cartons

Suppositories
10 grains, boxes of six

Schering & Glatz
150-152 Maiden Lane, New York

A soluble, readily absorbed and promptly excreted, practical, efficient and safe
Hypnotic, Sedative
and
Antispasmodic
which is firmly holding its place against all new comers.

Medinal

HARVARD ... JAN 7 191 ... CAMBRIDGE
Journal

Table of Contents

January 7, 1914

MASSACHUSETTS MEDICAL SOCIETY.

Symposium on Tuberculous Cervical Adenitis 1
Relation of the Tonsils, Adenoids and Other Throat Conditions to Tuberculous Cervical Adenitis. *By Geo. L. Richards, M.D.*, Fall River, Mass. 1
Treatment of Tuberculous Cervical Adenitis. *By Henry D. Chadwick, M.D.*, Westfield, Mass. 5
Treatment of Tuberculous Cervical Adenitis. *By John B. Hawes, 2d, M.D.*, Boston 6
Tuberculosis from a Dentist's Viewpoint. *By George H. Wright, D.M.D.*, Boston 8

ORIGINAL ARTICLES.

Visceral Ptosis. A Review. *By John T. Williams, M.D.*, Boston 13
A Few Notes on the Treatment of Anteposed Uteri. *By Henry T. Hutchins, M.D.*, Boston 18

MEDICAL PROGRESS.

Progress in Ophthalmology. *By Edmund W. Clap, M.D.*, Boston 21

CLINICAL DEPARTMENT.

Parotid Fistula Following Mastoid Operation. *By Philip Hammond, M.D.*, Boston 25

BOOK REVIEWS.

Essentials of Physiology. By F. A. Bainbridge, M.D. 26
Cunningham's Manual of Practical Anatomy. By Arthur Robinson, M.D. 26
Infant Feeding and Infant Metabolism. By Leo Langstein and Ludwig F. Meyer 26
Annual Experimentation and Medical Progress. By William Williams Keen, M.D. 26

EDITORIALS.

Announcement 27
The Tests for Membership in the Massachusetts Medical Society 27
Ptosis in Children 28
Proposed Transfer of Boston Quarantine Service 29
American College of Surgeons 30
Legislation on Care of Tuberculosis in Maine 30
Medical Notes 31
Current Literature 33

OBITUARY.

Edward Russell Cogswell, M.D. 38

MISCELLANY.

Belgian Physicians' Relief Fund 38
Military Nostalgia 39
Examination for Admission to American College of Surgeons 39
The Medical Association of the Isthmian Canal Zone 40
United States Civil Service Examination 40
Notices, Appointments, Resignations, Recent Deaths, Books and Pamphlets Received 40

Massachusetts Medical Society

SYMPOSIUM ON TUBERCULOUS CERVICAL ADENITIS.

Combined Meeting of the Sections on Medicine, Surgery and Tuberculosis.
June 10, 1914.

- I. Relation of the Tonsils, Adenoids and Other Throat Conditions to Tuberculous Cervical Adenitis. By Geo. L. Richards, M.D., Fall River, Mass.
- II. The Treatment of Tuberculous Cervical Adenitis. By Henry D. Chadwick, M.D., Westfield, Mass.
- III. The Surgical Treatment of Tuberculous Cervical Adenitis.* By Charles A. Porter, M.D., Boston.
- IV. The Treatment of Tuberculous Cervical Adenitis. By John B. Hawes, 2d, M.D., Boston.
- V. Tuberculosis From a Dentist's Viewpoint. By George H. Wright, D.M.D., Boston.

I.

Relation of the Tonsils, Adenoids and Other Throat Conditions to Tuberculous Cervical Adenitis.

By Geo. L. Richards, M.D., Fall River, Mass.

For the proper understanding of this subject a knowledge of the anatomy and of the relationship of the lymphatic drainage of the tonsils, the adenoid tissue and the pharyngeal region to the cervical lymphatics is necessary. Whereas considerable space is given to this subject in various text-books of anatomy, most of it seems to be based on the original work of Sappey, which was done on children many years ago, and that of Poirier, Cuneo, Delamere and Most. It is stated in many monographs on the subject that the tonsils drain into the superficial and deep lymphatics, but I am unable to find any valid, anatomical statement for their drainage into the superficial lymphatics. The superficial lymphatics drain the areas of the anterior part of the mouth and tongue, and then pass into the deeper chain, while all that is posterior, including the entire pharynx, the post-nares, the upper pharynx, the tonsils and the base of the tongue, drain into the deep lymphatics of the jugular chain, of which there are two or three sets.

Briefly, this anatomy is as follows:—There are two principal retropharyngeal glands, one on each side of the median raphe, at the junction of the posterior and lateral surfaces of the pharynx, corresponding to the situation of the arch of the soft palate, with sometimes three or more additional lymph nodes on one side or the other. These glands correspond to the general situation of retropharyngeal abscesses, these being invariably found on one or the other side of the median line. They receive the lymph coming from the mucous membrane of the nasal fossae, and adjacent cavities, and drain into the upper glands of the internal jugular chain, passing behind the vessels and the nerves. The general lymphatic drainage of the pharynx ends either in the retropharyngeal glands or the internal jugular chain. The glands of this chain also receive the lymph from the internal group of the sternomastoid glands. The lymphatics from the tonsil appear to drain into the posterior lymph glands of the tongue, thence into two lateral trunks, thence passing down the lateral wall of the pharynx terminating in large glands of

---

* No paper received for publication.

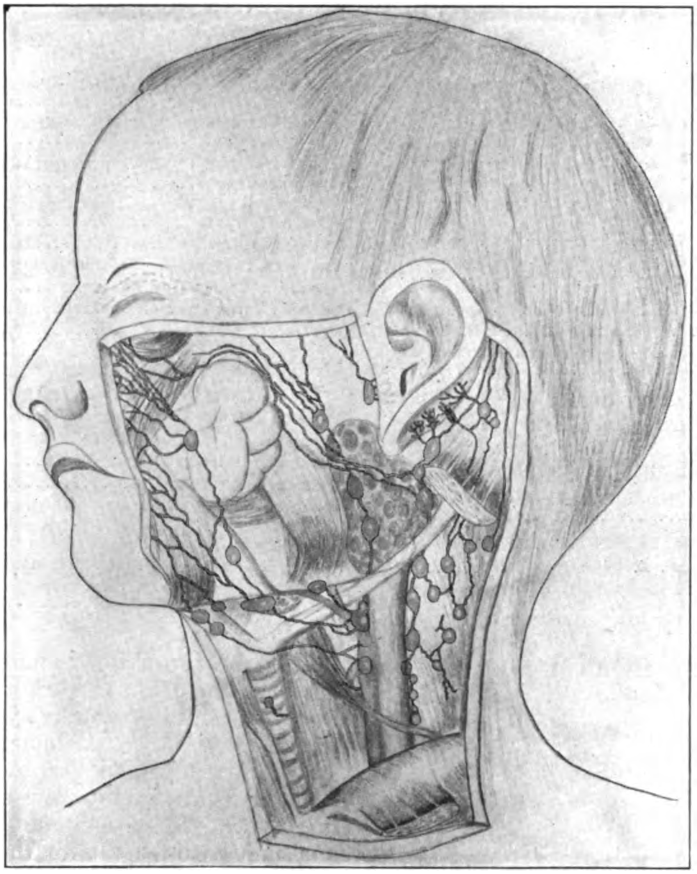


FIG. 1.—General scheme of the lymph-stream of the outer nose, the face and the side of the head, together with the lymphatic gland groups of the head and neck. (After Most.)

the internal jugular chain behind the posterior belly of the digastric. This is the principal meeting place of the neck lymphatics. A not inconsiderable number of the lymph vessels go directly from the posterior pharyngeal wall to the deep glands of the neck and the jugular region. The adenoid area drains into the posterior wall of the pharynx, which is the chief collecting point of the lymphatics of the pharynx both from the roof of the pharynx, and from the posterior and side walls, and from the Eustachian tube. The lymphatics of the larynx drain into the glands arranged along the internal jugular chain, the substerno mastoid glands being the principal terminus. The lymphatic glands of the lung form a rich network joining together up to the point of entrance of the lung where they become superficial. They pass through several pulmonary lymph glands forming by their union broncho mediastinal trunks. These course along the trachea to the lower portion of the neck, and finally open at the venous confluence or into the thoracic duct on the left, and on the right directly into the subclavian, or at the junction of the jugular and subclavian.

The tonsil itself develops as an ingrowth of endothelium from the second bronchial pouch. According to Gordon Wilson, in origin it is in line with the thymus and the thyroid, and is not a pure lymphoid structure. It begins to develop about the fourth month of embryonic life, and matures about puberty. It probably has some protective function in the early years of life as the experimental work performed by G. H. Wright and many others has shown. The argument that because no deleterious results follow enucleation, the tonsil is of no value, and should be removed in every case, is not a good one, since its period of greatest functional activity is before puberty. Tubercular adenitis is usually a localized tubercular affection most frequent in childhood from the sixth to the fifteenth year, although it may occur in early infancy, and seems to have some relationship to diseased tonsils, adenoids and general pharyngeal disturbance. It has repeatedly been demonstrated by Wood and others that tubercle bacilli can be made to invade and pass through the faucial tonsil without producing tuberculosis of the tonsil itself. The same is probably true of other portions of the lymphoid area whose anatomy we have been considering. When we come to estimate the number of cases of tonsils which of themselves are actually diseased, we find the number varying from one or two per cent. up to ten, according to the experience

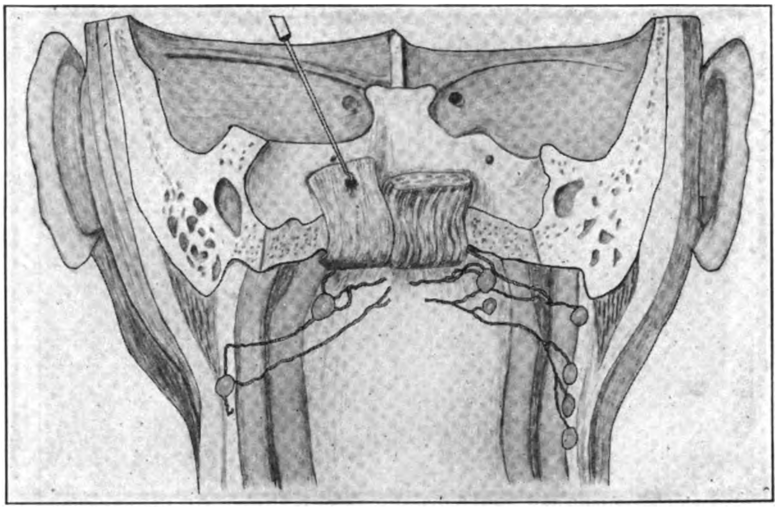


FIG. 2.—Lymph vessels and glands of the retropharyngeal space as seen posteriorly. (After Most.)

of the individual observer. Tubercle bacilli have been extremely hard to demonstrate in the tonsil, hence the question of the presence or absence of tubercular disease has had to depend principally upon histologic findings. A sufficient number of observations have been made to demonstrate that tubercular adenitis is not necessarily accompanied by a tubercular tonsil, but seems to have its source with the tonsils as the port of entrance of the trouble even though they themselves may not have been diseased. In one instance I removed the adenoids in a girl of twelve, some years later she had a severe attack of cervical adenitis, with broken down glands, which on removal, were found to be tubercular. The tonsils were removed at this time, and the individual has been perfectly well ever since. She is a strong and robust woman, and never had any cough. She married, the adenoids were removed from her child, and then this child developed adenitis with broken down glands, but without signs of any general tuberculosis. The glands were removed, and later the tonsils also, with the result that the child is now in perfect health, more than a year having elapsed since the last operation. I do not think there was any direct heredity in this instance, but in each case the infection occurred through the faucial tonsils. Certain it is that after removal of the faucial tonsil in many children previously suffering, to a greater or less degree, from enlarged cervical glands, these glands disappear and are no longer palpable to the finger. In a recent review clinic, held to determine the

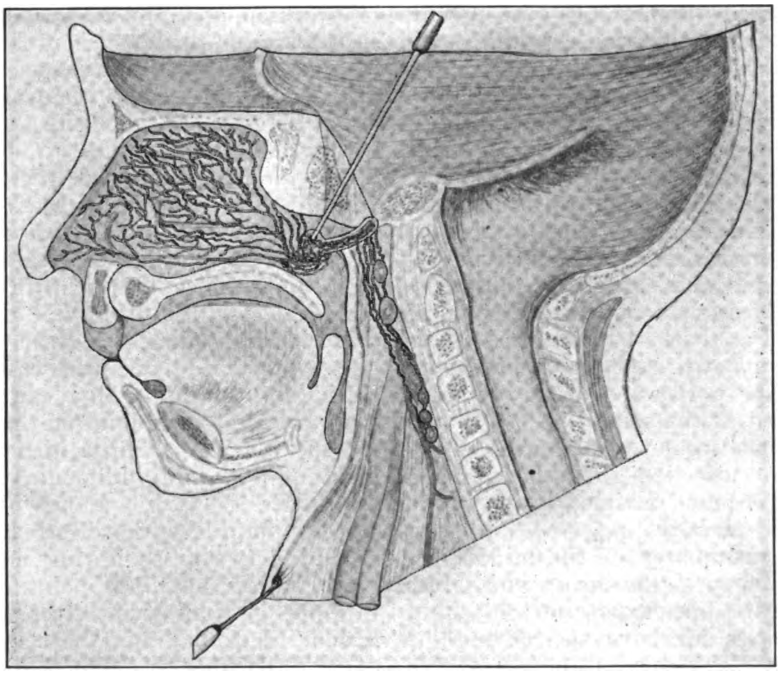


FIG. 3.—Lymph channel of the interior of the nose and the Eustachian tube. (After Most.)

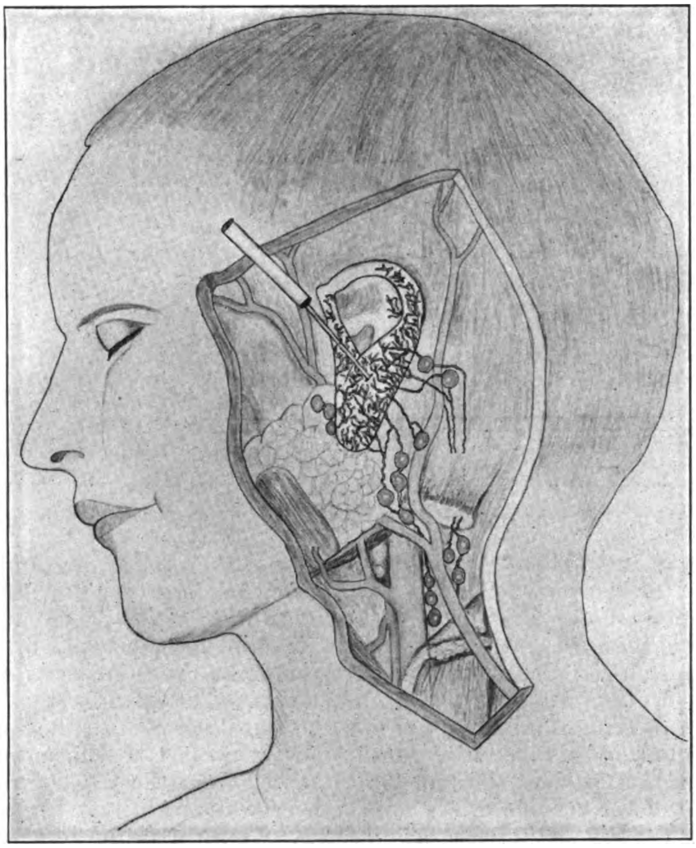


FIG. 4.—Lymph vessels of the external ear and the glands of the same region. In front of the ear are the two anterior auricular glands in the niche between the parotid and the anterior wall of the external canal. Behind the ear are the mastoid glands and below the ear five infra-auricular glands. The deep neck glands along the internal jugular are also shown. (After Most.)

final results, in a series of cases operated on for tonsils and adenoids, something over 100 in number, it was found that the cervical lymph glands, were, as a rule, felt not at all, or to only a slight degree. Many of these children did have enlarged lymph glands at the time of operation. Although it is impossible to determine in the individual case whether the tonsil is the source of the adenitis or whether its removal will cause a disappearance of the enlarged glands, I am inclined as the result of my own experience and that of others, to recommend that in all cases of cervical adenitis the tonsil be removed as the first procedure. If the glands are broken down, and an operation upon them has to be performed, then the tonsil should be removed at the same time. That the removal of the tonsil removes all source of possible danger of infection of the cervical lymph glands is not claimed, since anatomical studies already referred to have shown that the entire area of the middle ear, Eustachian tube, superior, posterior and lateral pharyngeal wall, the tonsils, base of the tongue, and posterior nares all have their lymphatic drainage area into the cervical lymph glands. The tonsil, however, being large, and situated in the back of the mouth where it is very subject to infection and to pressure during the act of eating and swallowing, is probably the greatest offender. As the tonsil is such a possible portal of infection, and as its removal seems to be followed by no deleterious effects upon the organism, and as it is very likely to be a source of entrance for the infection of rheumatism, I should advise its removal in all cases of cervical adenitis, and in all children whose parents give a history of having had cervical adenitis. At the same time, one cannot say with positiveness that the removal of the tonsil will either cure or prevent cervical adenitis. Here, as in other departments of medicine, each case must be judged on its own merits. One can always reassure the parents of such children that in all probability the cervical adenitis is not an accompaniment of a general pulmonary tubercular process, since the lymph glands of the lung drain directly into the blood stream, the drainage from the two areas having no direct meeting-place, unless near the point of final entrance into the general blood stream. It, of course, cannot be denied that there is some possibility of general infection from the entrance into the general blood stream of bacilli from the infected

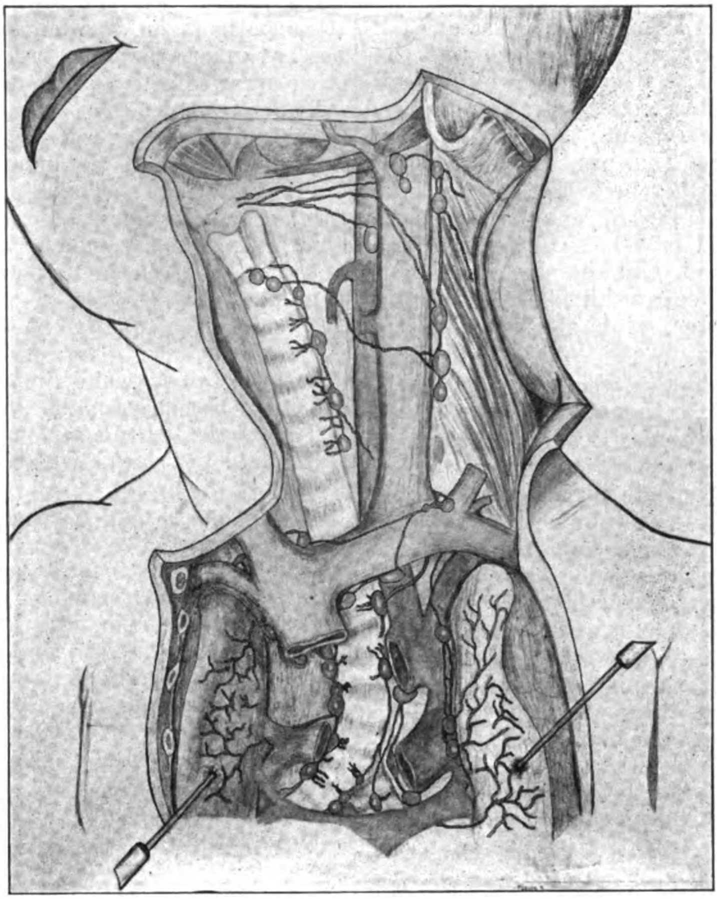


Fig. 5.—The lymph channels and glands in the region of the larynx, trachea and tracheobronchial glands, with their course from the trachea and the lungs. (After Most.)

cervical lymph glands. Practically, however, the process is usually limited to the area involved. It is not probable that all enlarged cervical lymph glands are tubercular, presumably about 80% of them are.

[I have to acknowledge in the preparation of this article my special indebtedness to the volume on the "Lymphatics" of Poirier, Cuneo, and Delamere, and to the articles entitled "Der Lymphgefâssapparat des Kopfes und des Halses," by Professor August Most, published in Vol. I "Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege," edited by Katz, Preysing and Blumenfeld, from which article the illustrations here presented have been redrawn.]

II.

Treatment of Tuberculous Cervical Adenitis.

By Henry D. Chadwick, M.D., Westfield, Mass.

Superintendent, Westfield State Sanatorium.

In March, 1910, a young woman 23 years of age, was transferred from the Massachusetts General Hospital to the Westfield State Sanatorium. One of the assistant resident physicians signed the application blank on which he made this note,—

"Tuberculous cervical adenitis; operation not advisable. Signs of tuberculosis present at right apex."

Briefly the history of the case was as follows:—

The glands of the left cervical region began to enlarge four years ago. Those of the right side two years later. Recently she noticed considerable loss of strength and her weight was fourteen pounds below normal.

Physical examination showed that the anterior, posterior and sub-maxillary groups of glands were all involved. The swelling was so extensive that the neck had lost all its natural contour.

While at the hospital a small gland was excised for examination and a pathologist reported that it was tuberculous.

There was slight consolidation of the right apex, without signs of active disease.

For the first week following her admission, her temperature varied from 100 to 103, and then gradually declined until it reached normal in about six weeks. During this time there had been little decrease in the size of the enlarged glands. After her temperature had been normal for about a month tuberculin treatment was commenced. The initial amount given was one millionth of a milligram. The dosage was cautiously increased up to a maximum of ten milligrams. The swollen glands steadily reduced in size during the treatment.

She was discharged as a patient in November, 1910. At that time her neck had a normal appearance and only a few of what had been the largest glands could be felt. Her general condition was very good, and she was given work as a ward maid. We continued the tuberculin several months longer, while she was thus employed.

The results in this case were so good that all subsequent patients, as they were admitted, were given tuberculin treatment if they had enlarged glands and their pulmonary disease was not so active as to contraindicate its use. I have had but a comparatively few adults with tuberculous adenitis who were suitable cases for this treatment. Each one has responded satisfactorily to tuberculin, except one out-patient. This woman came for treatment twice a week and continued her usual occupation. Although she came faithfully for the injections until a dose of ten milligrams was reached, there was no apparent decrease in the size of the glands. I am of the opinion that had this patient been under sanatorium conditions while being treated, a satisfactory result might have been obtained.

One other patient had cervical adenitis so extensively that it made operation inadvisable. She had been referred to the sanatorium from the out-patient department of the Massachusetts General Hospital. This girl had been at the sanatorium two different periods for a few months each, and left against advice each time. Tuberculin was given regularly while at the sanatorium, and continued at irregular intervals at the out-patient department of the hospital. In this case much good has been accomplished, but probably some of the larger fibroid glands will later need to be excised.

Another young woman had a marked enlargement of the right posterior cervical group. Some of the glands had become caseous, broken down, and there was a discharging sinus. Four months' treatment with tuberculin was without apparent effect. The enlarged glands were then excised, and the tuberculin continued. The wound healed by first intention. After her discharge as a patient, she worked at the sanatorium for two years as a domestic. Her health was excellent, although at one time a swelling appeared near the sight of the old scar, which, after resuming tuberculin medication, soon disappeared.

Many of the children admitted at Westfield have tuberculous cervical glands. Not many are noticeably large, but they can be readily felt on examination. Almost invariably these children also have enlarged bronchial glands, as evidenced by impaired resonance between the scapulae. As a routine part of their treatment, we put these patients on bacillen emulsion, if they do not have more than a degree of temperature, or other signs of active pulmonary disease.

The initial dose is one millioneth of a milligram, and the course of treatment extends over a period of about six months, until we reach ten milligrams. This maximum could be reached in a shorter time, but I feel that a small dose given over a longer period is more effective, and can be given in this way without causing reactions.

The result of treatment in these children is very satisfactory. The cervical glands decrease perceptibly in size, and the area of dullness over the hilus becomes smaller and less pronounced.

The longer the tuberculous disease has existed in a gland the slower will be the effect of treatment.

Resolution must necessarily be limited if fibroid changes have taken place. Suppuration has not occurred in any case where it did not exist prior to treatment.

One young girl having multiple tuberculous ulcerations of the skin and numerous involved glands showed marked improvement as soon as we began to administer tuberculin. She is still under treatment with every indication that the ulcers will heal and that the enlarged glands will disappear.

In a few instances where patients have developed adenitis while in the sanatorium, we have invariably found that instituting tuberculin treatment will prevent further swelling and cause that which has occurred to undergo prompt resolution.

This experience leads me to the conclusion that surgical interference is only necessary to remove such glands as have become caseous, or fibroid. Extensive dissections are unnecessary in these cases, as the small recently diseased glands that are left will disappear under the influence of tuberculin treatment.

IV.

The Treatment of Tuberculous Cervical Adenitis.

By John B. Hawes, 2d, M.D., Boston.

I wish it understood that I am making no special plea for tuberculin in the treatment of tuberculous adenitis. I believe that tuberculin does a certain amount of good in certain cases. With proper handling it does no harm. I also wish it understood that I am likewise not opposed to proper surgery. I feel very strongly that if we could multiply over this country men of the skill and experience in this line of Judd of Rochester, Dowd of New York, and Stone and Porter of this city, we might not need any tuberculin. What I want to emphasize strongly, however, is that surgery in many hands cannot do all we ask of it when dealing with a tuberculous infection. In every instance the operation, be it large or small, should be regarded as but an incident in a course of treatment, the most important part of which comes before and after the operation; and furthermore, it should be borne in mind that it is a human being and not merely a neck which is being treated. The average doctor cannot do a good disection of the neck; the radical operation, so-called, in most hands is not radical, and often does not cure.

The treatment of tuberculous adenitis has undergone a curious change during the past fifteen years. At first no pathological condition was looked upon as more properly belonging to the surgeon than enlarged tuberculous glands in the neck. The operation for "radical excision of glands of the neck" was a very common one in our hospitals and almost invariably it was entered in the record books that the patient was "discharged cured." It was indeed a curious state of affairs, because in practically no case was the operation radical in the strict interpretation of the word, and, as I believe I can demonstrate, it did not cure in a large proportion of cases, while in many of those in which an apparent cure resulted, large and disfiguring scars remained.

Next, late in the last decade, there swept over this country and Europe a wave of enthusiasm for the use of tuberculin as a cure for all forms of non-pulmonary tuberculosis. Surgery was decried; common sense methods of hygienic treatment were neglected, while many physicians, imbued with the tuberculin idea, became mere "injectors," as Nathan Raw scoffingly calls them. There is no need of dwelling upon the narrow mindedness of this attitude.

Finally, at the present time, a sounder and saner therapy has developed. Surgery, conservative or, in rare cases, radical, depending on the surgeon's skill or lack of it, has its place; tuberculin in some cases does wonders, in others it plays a lesser rôle and at all events, in competent hands can do no harm. Hygienic measures including out-door sleeping, proper diet, exercise and rest, baths and heliotherapy are given their proper place as the basis of all treatment in all forms of tuberculosis while, of the greatest importance, the cleaning up of portals of entry and removal of foci of infection such as carious teeth, diseased tonsils and adenoids are recognized as an essential part of treatment for this condition.

First, as to surgery in tuberculous adenitis, it is evident even to the casual observer, that in this city at least, and I believe elsewhere, the so-called "radical operation" is not performed nearly as frequently as it was ten years ago. The only possible reason for this must be that the result obtained did not justify its continuance. To make a complete dissection of the neck and to remove all traces of diseased glands is a difficult and well nigh impossible task. Were it possible to confine this operation to a few specially trained surgeons in every large city our results might be better; as it is, the operation is looked upon far too lightly and is entered upon without the skill, experience and training necessary for successful results. The tendency for surgeons to become trained and to devote special attention to diseases of one part of the body will, I hope, lead to better conditions.

I am far from maintaining that wholesale removal of glands is not the best procedure in certain instances. Where there are large, discrete isolated masses, without suppuration, a simple incision with removal of these masses *without any attempt* to do a complete dissection is frequently a measure of greatest value. In other less favorable cases, the removal of part of a large mass will often enable the patient to handle the rest of the diseased tissue himself. These operations, however, are not radical ones.

Conservative surgery has a far wider sphere of usefulness. The incision of abscesses and evacuation of pus, the curettage of an abscess cavity and removal of its contents, patient and detailed care in draining sinuses, etc., are regarded as surgical drudgery; careful attention paid to the details of this work, however, play a large part in producing good results.

The use of tuberculin will probably be confined to specialists and will never become common among general practitioners. While among the 250 cases of tuberculous adenitis that have been under my care during the last five years in whom tuberculin has been a part of the treatment, I have met with some discouraging results. I feel that on the whole tuberculin has accomplished a great deal of good and *in no case has done any harm.* The reasons for failure or unsatisfactory results with tuberculin have been chiefly as follows:

a. The length of treatment and consequent effect on the patients who frequently become discouraged and drift away before any results can be expected.

b. Poor general condition of the patient which prevents any response to tuberculin.

c. The presence of active pulmonary tuberculosis. I am unwilling to give tuberculin to such patients except under absolute supervision in a sanatorium or elsewhere.

d. Certain isolated, walled off, discrete masses of glands in adults or young adults. Surgical measures are best for these cases.

Those patients, on the other hand, who have done well with tuberculin or accompanying the use of tuberculin group themselves as follows:

A. A large group of patients who have been operated upon more or less extensively for tuberculous glands. I am firmly convinced as the result of a fairly wide experience in such cases that tuberculin is a great help not only in curing immediate trouble but in preventing recurrences.

B. Patients, adults or children, with discharging sinuses which have persisted in spite of proper treatment. Tuberculin has been a great help in closing such sinuses.

C. Children with more or less scattered glands, making operation inadvisable, living under proper hygiene, who despite this seem to be at a standstill or to be going slowly down hill and whose glands are gradually enlarging. It is in this class of cases that tuberculin has produced brilliant results.

D. Comparatively rare cases in adults where a large mass of glands, often smooth, hard and immovable, is surrounded by much periglandular tissue. I have not infrequently seen such masses literally melt away under tuberculin.

Finally, I would again emphasize the fact that tuberculin should be looked upon with respect as a potent agent for good or for evil in all forms of tuberculosis. The chief criterion in its use should be not to do harm.

Of hygienic measures little need be said. I may safely take it for granted that the medical profession of this State is fully alive to the fact that not only pulmonary but all forms of tuberculosis demand fresh air day and night, rest and exercise in proper proportions, good food well prepared, baths, and sunlight and all that constitutes what I may call "right living." The care of tuberculous adenitis demands all of these. They are the foundation on which successful treatment rests.

Last, not only in helping to cure, but of more importance, in preventing this condition, the hygiene of the mouth and throat is most essential. Diseased tonsils whether large or small, adenoid growths and carious teeth must receive their due attention. The details of how best to do this may well be left to others better qualified than I.

On closing, two thoughts seem to me to be of prime importance—namely, that the physician remember always that cervical adenitis is but a form of tuberculosis and that he is treating not a few enlarged glands of the neck, but a human being suffering from an infection with the tubercle bacillus.

V.

TUBERCULOSIS FROM A DENTIST'S VIEWPOINT.

BY GEORGE H. WRIGHT, D.M.D., BOSTON.

We have heard the viewpoint of the surgeons and general practitioners, and of course I hear the viewpoint of the nose and throat men every week. The viewpoint of the dentist I think is important in this study inasmuch as most of the children which are treated for cervical adenitis are found between the ages of two and fourteen years.

These drawings* show: (1) A temporary tooth whose roots partially absorbed are in apposition over the crown and mesio-distal side of a permanent tooth. (2) A permanent tooth being undeveloped as to its root, lying beneath this temporary tooth, is easily pressed from above in the process of mastication. (3) A permanent tooth, first molar erupting through the gums approximately at six years of age showing large pulpy mass of embryonic connective tissue showing blood vessels, non-medullated nerves and only partial development of its roots. These states of tooth development are normal and exist through infancy and childhood and up to the time of eruption of the third molars. A consensus of observations find cervical adenitis in humans between two and fourteen years.

There exists a definite anatomical relation between these teeth and cervical glands. As the upper teeth develop we have growth of the face from the floor of the orbit downward, at the same time the face expands laterally. The lower jaw grows backward in the direction of the angle and ramus of the jaw, and subsequently becomes the location for three permanent molars. This growth is influenced through the function of use in mastication and deglutition. In this normal physiological process of growth, bone is formed, absorbed and reformed. Hence the necessity for lymphoid glands, which care for normal physiological waste.

The glands involved in this process are definitely bounded and located within a small triangle anterior to the sterno-cleido mastoid. From the symphysis of the lower jaw at the median line down to upper border of the hyoid bone, then backward and obliquely upward to angle at ramus of jaw with the lower border of jaw as base we have a small triangular area into which drains all material physiological or pathological from the alae nares, the vestibule of the nose, lips, cheek muscles, tissues of the gum, ligaments around the teeth called the peridental membranes, the alveolar process and the jaw bone. This does not include the faucial tonsillar gland, which lies near the anterior border of the sterno-cleido mastoid and is drainage for the tonsil. Having considered these two relations: (1) The mechanical factors of normal eruption with the pump-like action of the pressure of mastication. (2) The anatomical status of the teeth and structures involved in a glandular enlargement within a limited triangular area, we finally consider a third factor influencing the entrance of the tubercle bacilli.

I believe the individual or combined activities of the streptococcus, staphylococcus, or pneumococcus, and occasionally other microörganisms, are the common predisposing factors and almost necessary agents which prepare the tissues and and open a pathway for the subsequent invasion of tubercle bacilli. Such agents we always find in a dirty and diseased condition of the teeth and adjacent structures. This belief is strengthened and confirmed by experimental researches and recent clinical observations.

Cornet (*Journal American Medical Association*, Aug. 6-13, 1910) demonstrated before the tenth meeting of the German Surgical Society that he could produce tuberculosis of the cervical glands by inoculating pulps of teeth through artificial cavities of animals. Then obtained the same results by rubbing cultures of the tubercle bacilli between the lower incisors, root and alveolar process.

---

* See Lee, BOSTON MEDICAL AND SURGICAL JOURNAL, May 2, 1914.

Baumgarten (*Journal American Medical Association*, Aug. 6-13, 1910) fed animals on tuberculous material. In every case produced tuberculosis of cervical lymph glands and found an involvement coincidently of the tonsils.

Odenthal (*Journal American Medical Association*, Aug. 6, 1910) found in 131 cases of caries of the teeth a glandular enlargement on one side only and that associated with the teeth.

Reese tabulated 13,167 children, 80% with carious teeth.

Stark (*Britr. Z. Klei. Chir.*, xvi) examined children with cervical lymphadenites, 80% with carious teeth; 16% of the 80% with hereditary predisposition to tuberculosis, 41% of the 80% no other cause than carious teeth. Average age, eight and one-half years.

Morelli and Jaruntowski (*Zahnartzl. Wochnbl.*, viii, 3701) demonstrated tubercle bacilli in carious teeth of patients suffering from phthisis.

Hoppe found tubercle bacilli in carious teeth of otherwise healthy patients.

The possibilities bound up in the microorganism streptococcus when it leaves one live body to continue its growth in another are enormous. This bacillus alone is capable of lowering the vitality of the tissues and through its hemolytic action on the blood and adjacent structures to render a pathway for the invasion of tubercle bacilli a simple matter, and although at times the streptococcus may be harmless it posseses the alarming capacity through transmutation of becoming a most virulent germ. As to whether it becomes harmful or not appears to depend on its environment and oxygen supply.

For example:—

An abscessed root of a tooth with a confined gangrenous pulp and necrotic area of alveolar process deep down below the surface of the gum, would favor the growth of the virulent type of pus-forming streptococcus through lack of oxygenation of the parts, whereas such microorganisms might be recovered from the surface mucosa of the mouth, and on cultivation and inoculation show the harmless variety by comparison. It is a localized hemolysis that has prepared a favorable pathway for the subsequent invasion of the tubercle bacilli through the structures described, into lymph spaces not definitely defined by endothelial walls, thence into the true lymph vessels and finally into the cervical glands. I believe this is the mode of entrance for toxins into the system, as manifested in arthritis, when associated with infection from the teeth, albeit the local glands are not involved or enlarged.

A word relative to the discussion by Dr. Chadwick: We consider all tuberculous patients poorly equipped unless they are surgically clean as to teeth and alveolar process and decidedly handicapped when unable to properly prepare food for assimilation without teeth with which to masticate; if not by natural means then substitutes should be provided. We believe every institution for the treatment of tuberculous diseases should include a proper care of the teeth and mastication.

Summary.—We have shown the anatomical relation between teeth and glands. (2) A mechanical factor, influencing the pumping into the adjacent tissues of debris through loose teeth and mastication. (3) A prepared pathway and open door for the entrance to glands of tubercle bacilli by the localized hemolysis of tissues through the action of the streptococcus and other bacteria.

DISCUSSION.

A. N. Broughton, M.D., Jamaica Plain, Mass.: Dr. Porter has stated, in a very large measure, what I believe about the subject under discussion. When I was at the hospital here we had the régime where nearly all the men did a complete dissection of the neck for tubercular adenitis. Those were the days in which we had extensive, mortifying, and disfiguring scars very commonly. When I got out of the hospital, I found it an imperative thing to clean up the neighborhood in which I lived of tonsils and adenoids. In the first ten years, I did a considerable number, thinking that all large tonsils and adenoids needed operation. The same thing applied to tubercular glands. In later years, not because I have cleaned up the neighborhood entirely, I have operated more and more sparingly on glands, tonsils, or adenoids.

My attention was called to the relation between the teeth and the tonsils by Dr. Wright's work, of which he will speak later. In a reprint of his and Dr. Cobb's, I got my first suggestions as to the relation between those structures. I have come to believe entirely in the theory that the enlargement of tonsils alone is not an indication for operation.

In the cases of cervical adenitis, I notice that most of the men who have spoken have grouped them very largely as tubercular, even if they were not demonstrable as such, and I agree that a large percentage of them are tubercular and of the bovine type, even when a tubercle cannot be pathologically demonstrated. I believe that the thing of the utmost importance to do first is to get rid of the focus. It seems to me foolish to operate on the glands of the neck and leave a source of infection in the throat. Having gotten rid of the tonsils or adenoids which are infected or the carious teeth, the next problem is a very considerable one, and I agree with Dr. Hawes, as well as Dr. Porter, in believing that in all cases a most thorough and comprehensive anti-tubercular treatment should be faithfully tried until it is perfectly clear that the glands will not quiet down. If they do not, after an extended trial, I believe in operating. Even then, I think it wise to get out with as little disturbance of the glands as possible.

Judd's statistics, of which Dr. Porter spoke, are interesting. There is one paragraph in which Judd states that a very large number of glandular enlargements disappeared after they cleared up the tonsils and teeth, which were the sources of the enlargement, without coming to radical operation. This goes hand in hand with his statement that if you were to examine a very large number of children under fifteen, in a majority of cases you would find a distinct glandular enlargement. So that although Judd reports over 600 cases as operated, it is obvious that many more were not operated excepting to remove the tonsils or adenoids. In other words, apparently, they believe at Rochester that the thing of first importance is to remove the source of the infection, and that a large portion of the glands will quiet down of themselves after that.

I want to call attention to the statement of Dr. Richards in relation to operating on children for tonsils and adenoids, where the parents have been tubercular. It seems to me it would be a mistake to do that commonly. You cannot get away from the fact that if you take away a healthy tonsil, you are removing one line of defence. When those defences have lost their value, it is right and proper to remove them. But to anticipate and operate on an otherwise healthy tonsil merely because the parents have been tubercular seems to me far too radical. It goes without saying, that at the first sign of infection, they should be operated.

I think there is a distinct choice as to the right time for operating even on the tonsils and adenoids. Where the glands are enlarged and are about ready to break down, by operating one throws an additional burden upon the glands and increases the amount of septic absorption and hastens their breaking down. If possible, I like to do a tonsillectomy when the glands are receding, or before they are at all near the breaking down point. Again, in these cases I would emphasize the need of a faithful anti-tubercular treatment before deciding that it is necessary to operate. In this respect, many of the good results of Dr. Chadwick's cases, I believe, were not alone due to the use of tuberculin, which he emphasized, but also to another advantage, which he did not speak of, the very efficient anti-tubercular treatment that they had in other respects. My experience with tuberculin has been smaller than any hospital practice would give, but I think it is one of the agents which in carefully selected cases very materially helps.

As to mortality in a radical operation, I do not think that ought to weigh in the scale, materially. There should be, roughly speaking, little or no mortality. I doubt if it is a question of that nearly so much as a question of scar and the dread, not of recurrence, but the growing of smaller glands which were overlooked. I do not care how careful the dissection is, it is surprising how many small glands will be found to be somewhat enlarged, even shortly after the operation. Those glands were simply overlooked at the time of operation.

The cases of tubercular adenitis that are under two years of age I believe to be more serious than in older children. It is much harder to take care of them by any anti-tuberculous treatment in my experience, and I consider them very grave cases for prognosis.

D. Crosby Greene, M.D., Boston: I was interested in seeing the drawings of Professor Most, because there is an article which he published five or six years ago which is of some moment as bearing upon the discussion this afternoon. He at that time made a series of injections to determine the foci of infection of cervical tuberculous glands. He published the results of these injections, which were somewhat as follows: A large majority of the afferent lymph channels of these glands were traced somewhere in the tonsillar region, the region of the pharyngeal tonsils. The proportion was about 70%. A surprisingly large proportion, 13% as I recall it, was found to derive its infection from sources which were near the surface of the skin. These places were the point of juncture between the skin and mucous membrane at the corners of the mouth, at the entrance into the nose and at the margin of the eyelids. In about 13% of the cases, which numbered over 100, the infection was traced to these superficial places on the face. The remainder of the cases apparently were infected from the teeth and other places inside the mouth.

Dr. Porter has said that it is up to the throat men to arrive at some unanimity as to whether a tonsil is the source of infection or not in a given case; that in a given case we should learn whether a tonsil is tuberculous or not. This is a very difficult proposition. We know in the first place that the presumption is in favor of the tonsil as the portal of entrance for infection. We know also that in a very large proportion of tonsils in cases of tuberculous adenitis it is impossible to find evidence of tuberculosis either by microscopical examination or by bacteriological examination or by injection. In my own experience (I have not tabulated the cases) I have had examinations made in a great number of cases and the results have not been at all definite. In some cases of tuberculous adenitis, tubercle bacilli have not been found in the tonsils. In some cases we very often got no evidence of tuberculosis in the tonsils. In other words, the tubercle bacilli can make their way through a tonsil into the gland without leaving any trace in the tonsil itself in the way of tuberculous disease of the tonsil or even without the presence of the bacillus of tuberculosis. There are, of course, cases in which it is possible to make the diagnosis of tuberculosis of the tonsils, but I believe such cases are extremely rare. Cases in which a distinct lesion, which can be classified as being a tuberculous lesion of the tonsil, are so rare as to be negligible. I have not seen more than two in my experience. I believe they must be very rare. These are usually cases of tuberculous ulceration of the tonsil, which do not constitute any considerable portion of the cases under consideration.

JAMES S. STONE, M.D., Boston: It is important to recognize that by no means all glandular swellings in the neck are tuberculous. Comparatively few of the sudden, acute, painful swellings are of this character. The location of the swollen glands gives some indication of the nature of the infection. In determining the primary focus from which the cervical glands become infected, certain anatomical points are of great help. If a line is drawn vertically upward from the middle of the auditory canal, roughly speaking any infection in front of that line and above the outer corner of the eye may lead to involvement of the preauricular glands; any infection on the face below the outer corner of the eye but above the outer corner of the mouth may involve the glands which are in front of the angle of the jaw close to the groove in which the facial artery can be felt; any infection below the corners of the mouth may involve the submental glands; any infection behind the line drawn upward from the middle of the auditory canal drains back into the posterior group of glands. These simple guides, though not strictly correct anatomically, serve as a good clinical working basis. The lymphatics of the throat, the nasopharynx and the tonsils, drain into the deep glands which lie behind the angle of the jaw and under the middle of the sterno-mastoid muscle. The lymphoid tissue of the naso-pharynx is without question the most common point of entry or seat of primary infection in cases of tuberculous cervical adenitis. But neither the gross appearance of the tonsils nor the clinical manifestations of adenoid hypertrophy bear any constant relation to the severity of the infection of the cervical lymphatics. The lymphatics from the tonsils pass a little further forward, nearer the anterior edge of the sterno-mastoid muscle, than do those from the posterior pharyngeal wall or the Eustachian tube, which may lead into glands near the posterior border of the sterno-mastoid muscle. The glands involved in infections of the middle ear usually lie behind the sterno-mastoid.

These definite anatomical groups of glands give us a clue as to the source of the infection. Cervical adenitis is always a secondary infection. There must be some point of entry from which the infection starts. This point of entry is not always evident when we see the enlarged glands. The original source of infection may be healed. Moreover, a relatively normal tonsil may allow the passage of tubercle bacilli through it and not itself become infected. It is sometimes impossible to tell whether a tonsil is or is not infected. If the tonsillar group of glands is infected, even though no primary source of infection can be found, it must be assumed that the tonsil is not normal and ought to be removed, even though it shows no sign of disease; because the evidence is practically overwhelming that it has been the point of entry and may still contain the focus of infection.

No mention has been made of something which frequently occurs after complete enucleation of the tonsils. I refer to the development of lymphoid tissue along the posterior pillars of the fauces. Since complete enucleation of the tonsils has become common, we are, I think, beginning to see more and more retro-pharyngeal adenitis. Frequently I have seen lymph nodes, and have at times dissected out tuberculous lymph nodes, at the point of the posterior pharyngeal wall which comes in view as you look in underneath the soft palate. Within the last few months I have seen more such cases of lymph node infection in that region than before. I think this is in part due to the development of the lymphoid tissue, which seems to take the place of the enucleated tonsils. This reformation of lymphoid tissue should make us conservative and not allow us to yield without reason to what is becoming a common request of parents, that the tonsils and adenoids be removed because a child has occasional or even frequent colds.

In addition to recognizing that lymphadenitis is a secondary infection, and recognizing the importance of removing the primary focus, we must remember that hygienic treatment is of supreme importance both before and after operation. In that I would agree absolutely with Dr. Hawes. Dr. Chadwick mentioned the importance of sanatorium treatment, making the very suggestive statement that the cases in which he had failed with tuberculin were out-patients at his sanatorium, where he could not give them the out-door hygienic care.

Dr. Porter spoke of three groups of cases. The first included babies under two years of age. I feel very strongly that these are among the most serious cases with which we have to deal. A child under two years who develops tuberculosis has little resisting power, or a very serious infection, is a poor risk. They have no business to develop tuberculosis at that age. If they develop it, whether they are treated medically or surgically the risk is great. In each individual case the treatment must be outlined according to circumstances. If the only important focus is in the cervical glands, that ought to be treated surgically. If the cervical adenitis is only part of a general tuberculosis, then surgical treatment is a minor consideration.

The second group mentioned by Dr. Porter included the cases coming on in older children. He mentioned the difference between the cases of lymphadenitis in children and the cases which occur in adults. I think that there is a very definite basis for the difference. In children the vast majority of the cases of lymphadenitis occur in the tonsillar group right under the middle of the sterno-mastoid muscle. I feel that the bulk of those cases are of the bovine type, and that the liberal milk diet of children is a great etiological factor in those cases—a bovine infection, tuberculous milk, the bacilli entering through the tonsils and spreading to the glands.

In the third group, including adults, the cases resemble somewhat those seen in babies. The infection is more frequently of the human type, and often the lymphadenitis is only a part of a general tuberculosis. The source may not be directly from the tonsils; it may not be directly from the lungs. These patients have a lowered resistance to the tubercle bacillus. The infection may involve chiefly lymph glands, or may involve any organs of the body. In those cases where the infection spreads from one group of lymph glands to another the fact that any particular glands are affected does not mean that the source is in the region from which the lymphatics enter the particular glands, but that there is a systemic infection, the involvement of the lymph glands being an incident.

Dr. Hawes says he holds no brief for tuberculin. I hold no brief against tuberculin. Many swollen glands subside while being treated with tuberculin, as they do under other methods of treatment. The much despised poultice used to be a favorite treatment. A flaxseed poultice will do one of two things. It will either, if it is possible to bring about resolution, hasten this, or if the disease is so advanced that this is impossible it will hasten breaking down. It will make the glandular condition declare itself. It will clear up a condition in the same way that Dr. Hawes says tuberculin clears it up. These are the cases where good surgical judgment is necessary. If one objects to the term poulticing as being old-fashioned, it may be called inducing hyperaemia.

Cases of tuberculous lymphadenitis should be treated either as glands or as abscesses. I feel more and more that no middle ground is tenable. We ought to excise glands or open and treat abscesses. If enlarged glands have persisted for a material length of time and are not subsiding within a couple of months, then those glands ought to be removed surgically, provided there are not complications which render this unwise. If the adenitis is only a complication of a medical tuberculosis then we must treat each individual case on its merits.

In children the removal of the glands and of the primary trouble in the vast majority of cases cures the infection once and for all. The cause must be removed. If we cannot treat the glands as glands and remove them, then they should be treated as abscesses. A question is very commonly asked by parents and by patients today; one put in their mouths by the medical men of an earlier generation. "Is it ready to open?" That question is most pertinent. The best results in treating abscesses can be obtained by letting the glands thoroughly soften down, become thoroughly walled off, not by a firm fibrous capsule, but by a zone of inflammatory tissue. Let the abscess come near to the skin, but not involve the skin, for skin involvement means slow healing and disfiguring scars. Then when the glands have formed an abscess it can be drained, the tuberculous material can be thoroughly removed by curetting and wiping out with gauze. The best results can be obtained by a thorough, careful, painstaking cleaning out of the abscess cavity, followed by packing lightly but thoroughly into every recess of the cavity with gauze. The gauze may be left untouched for a period of four or five days, or even a week. It may smell bad, it becomes saturated with pus, but during this time there has been opportunity for the inflammatory wall around the outside to throw out granulation tissue. The wick at the end of five or six days may be removed and nothing replaced. Very frequently an abscess so treated will heal immediately and give no further trouble. In this way the constant dressings, which to children especially are terribly trying, with the frequent packings, cauterizations, and the long drawn out treatment of sinuses, may be avoided.

The cases in which some glands are only just becoming caseous, while others have been completely destroyed and formed abscesses, are those in which the skilled judgment of the surgeon is necessary if a satisfactory outcome is to be obtained. Fortunately we see today in the hospitals much less severe cases than were formerly common. Patients seek treatment earlier.

One thing in regard to the scars is important. A line of incision along the skin fold of the neck gives a trifling scar. But if the incision is long it is absolutely essential that the platysma which lies at right angles to the line of the skin folds of the neck should be stitched, because if this is not stitched then the line of the scar inevitably spreads.

It is most important to visualize as clearly as possible the entire pathological process. If the complications or the general health of the patient are the chief factor the treatment of the glands themselves becomes a matter of comparatively little significance. When, however, the glands are the chief manifestation of the tuberculous process, one should picture clearly exactly the condition of the glands. When the infection first begins there is swelling due to congestion and edema. This at first is confined to the glandular structure alone, but if the process is severe it very soon spreads into the peri-glandular tissues. The spread into the peri-glandular tissue is what brings on pain on movement and the ordinary symptoms of a stiff neck. There may be hyperemia and swelling of the glands and also peri-glandular inflammation without the process going on to caseation. If, however, the process continues long, a caseous destruction in the central portion of the gland is inevitable. This may occur in one or in many foci within the glands, but for a long time there may be a considerable amount of glandular tissue left intact.

Sometimes before the destruction of the glandular tissue has become complete, the disease may spread through the capsule into the surrounding tissues. In other cases where the process is more slow the destruction of the gland goes on so quietly that the process is entirely confined within the capsule. The spread of the caseous process into the peri-glandular tissues renders the formation of an abscess certain. This process spreads in the soft parts until it reaches the skin, then it involves the skin, finally perforates the skin, and a fistula becomes established, which may or may not heal, according to the resistance of the patient and the particular conditions existing in the course of the fistula. If the caseous process is confined within the capsule of the gland, then for an indefinite time, even for many years, there may remain a tuberculous cyst in which the organisms may be dead—or at least are absolutely quiescent—until something in the general condition of the patient or some local trauma lights up the process again.

With a mental picture of the pathological process clearly in mind, the surgeon should decide whether he can aid nature by eradicating the disease or whether he can better and more safely aid nature by simply hastening a destructive process which ordinarily is slow and tedious; but the surgeon should have an opportunity to decide sufficiently early to be given a choice.

Original Articles.

VISCERAL PTOSIS. A REVIEW.*

By John T. Williams, M.D., Boston,

Fellow in Gynecology, Harvard Medical School; Third Assistant Visiting Surgeon for Diseases of Women, Boston City Hospital; Assistant to the Surgeons, Gynecological Department, Boston Dispensary.

The subject of visceral ptosis is exceedingly complicated, ptosis being not a local process, involving one or a few organs, but part of a much more general condition, involving not only the abdominal contents, but the musculature and bony framework of the body as well.

Although the clinical picture of enteroptosis was clearly described by Glenard[1] in 1885, failure to recognize the general nature of the condition has been responsible for almost uniform failure of all methods of treatment. The work of recent writers, especially Goldthwait,[2] Martin,[3] Smith,[4] and Coffey,[5] has resulted, however, in a clearer understanding of the subject.

It is my purpose to review briefly our present knowledge of the mechanics, causes and symptoms of visceral ptosis and to set forth with a little more detail the varying ideas as to its treatment.

Clinical Appearances. The clinical appearances are easily recognized by the characteristic ptotic figure. The attitude is that of physical weakness. The individual is round-shouldered and flat-chested, standing with the head drooping and arms hanging in front of the center of gravity of the trunk. The waist line is high, the lower abdomen protuberant, giving in uncorseted women not infrequently the appearance of pregnancy. The costo-vertebral angle is more acute than normal. The lumbar curve of the spine is usually obliterated, giving rise to the straight back, although occasionally the lumbar curve is exaggerated to the point of lordosis. The muscular development is below par and the patient is usually thin and anemic.

Closer observation shows that the abdominal cavity is narrower above than below, because of the flattened chest and straight spine. The pelvic inclination is much diminished, the sacrum being perpendicular and the lower border of the symphysis pubis sometimes at a higher level than the coccyx. As a result of this, the axis of the pelvis is continuous with that of the abdomen, instead of forming an angle with it, as normally.

Gynecological lesions are rather common, not as a direct result of the prolapse of the abdominal viscera but of the patient's general lack of tone.

Anatomy. In order to fully understand the anatomical conditions present in ptosis, it is necessary to review the differences in development between man and the quadruped. In the quadruped, it will be remembered, all the intraperitoneal viscera are freely movable and equipped with a mesentery.

In man, on the other hand, certain changes in development take place in order to furnish additional support to the abdominal organs, necessitated by the erect posture. Briefly stated these are:

1. Fusion of the liver with the diaphragm.
2. Retro-peritoneal fixation of the duodenum and pancreas by obliteration of their mesentery.
3. Adhesion of the ascending and descending colon and mesocolon to the posterior parietal peritoneum.
4. Adhesion of the transverse colon to the great omentum.
5. Fusion of the anterior and posterior layers of the great omentum.

The separate means of support of the individ-

---

* Read before the Chirurgical Society of Boston, Sept. 17, 1914.

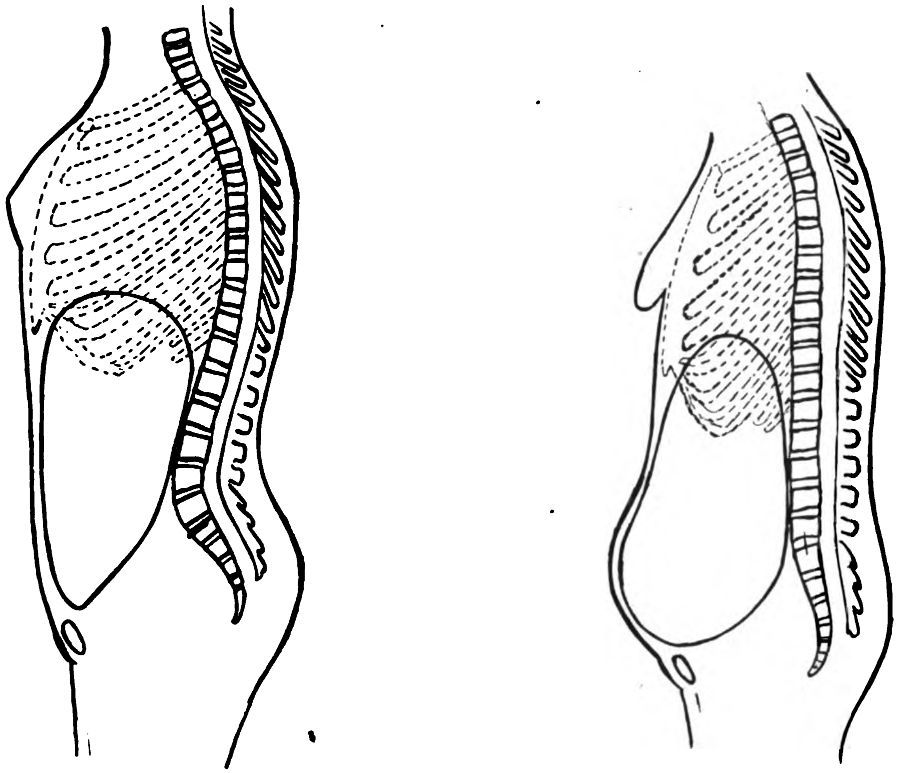


FIG. 1. FIGS. 1 AND 2. FIG. 2.

Showing the differences between the normal figure (1) and the ptotic figure (2). In the latter, note the protuberance of the abdomen; its greater width below than above; the absence of an angle between abdominal and pelvic cavities; the diminished pelvic inclination; the straight spine; flat chest; and the more acute costo-vertebral angle.

ual organs are as follows: The posterior half of the liver is fused with the diaphragm, the ventral half being supported by the falciform ligament. The cardiac end of the stomach is firmly fixed by the esophagus and gastro-phrenic ligaments. The remainder of the organ is suspended from the under surface of the liver by the lesser omentum, which is thickest at its free border, where it contains the vessels going to the liver and the bile ducts. The pancreas and duodenum are retroperitoneal and firmly attached to the vessels in front of the vertebral column.

The duodeno-jejunal angle is supported by the muscle of Treitz, which runs to the left crus of the diaphragm. The small intestine is freely movable, being attached to the posterior abdominal wall by its mesentery, which is shortest near the termination of the ileum. The cecum and ascending colon are adherent to the posterior abdominal wall, their mesentery having become fused with the posterior parietal peritoneum. The hepatic flexure receives support from the liver by the hepato-colic ligament. According to Longyear, it is also connected with the right kidney by a firm band of fibres, but this offers no support to the colon because the right kidney is the least firmly supported of all the abdominal organs.

The transverse colon is suspended from the stomach by the gastro-colic omentum and indirectly from the diaphragm through the liver, lesser omentum and stomach. The splenic flexure is the most firmly supported point of all, being held in position by the gastro-colic and gastro-splenic ligaments. The descending colon is also firmly attached to the posterior abdominal wall by fusion of its mesentery with the posterior parietal peritoneum. The sigmoid has a short mesentery.

The kidneys are retroperitoneal, surrounded by a fatty capsule, and undoubtedly derive more or less support from the parietal peritoneum and the layers of the fused mesentery of the ascending and descending colon.

In addition to these direct supports which we have described, there are two important factors in maintaining certain of the abdominal organs in place. The first of these, the backward pressure of the abdominal wall, is sufficiently obvious.

The second was pointed out by R. C. Coffey.[5] If we look at a sagittal section of the normal body (Fig. 3), we observe that the kidneys are situated in the lumbar fossae, behind the peritoneum, and back of the line of downward pressure on a sort of shelf formed by the lumbar curve of the vertebral column and the psoas muscle. This shelf makes an angle of 51° with the horizon and undoubtedly plays no small part in the retention of the kidneys in normal position.

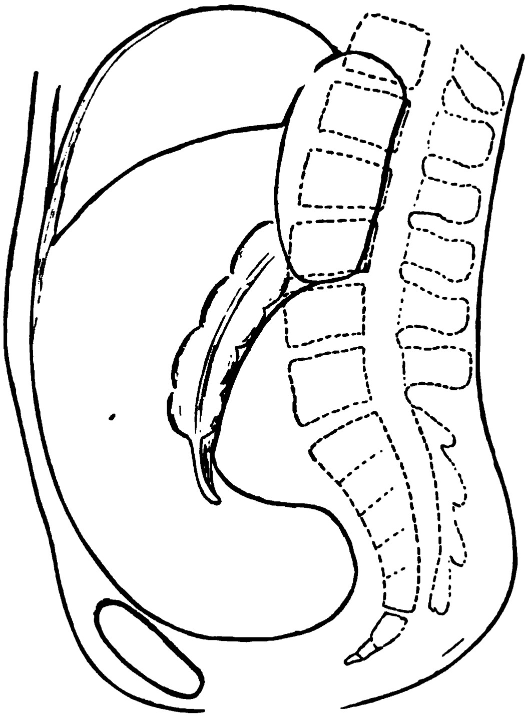


Fig. 3.

Showing the kidney shelf formed by the psoas magnus muscle with the lumbar curve of the spine.

Goldthwait lays considerable stress on the importance of the cervical fascia, which through its continuation, the pericardium, forms a suspensory ligament for the diaphragm. He has demonstrated that putting the cervical fascia on the stretch by throwing the head backward will raise the stomach three to four inches.

The most firmly supported points in the visceral tract are the cardiac end of the stomach, the splenic flexure of the colon, the pylorus and the duodenum. The least firmly supported points are the stomach between its two extremities, the cecum, ascending colon, hepatic flexure and transverse colon. For this reason prolapse of the right kidney occurs early in the process, and is extremely common. Prolapse of the left kidney, on the other hand, is found only when the splenic flexure, the most firmly supported point of the intestinal tract, gives way, and is indicative of the most complete form of ptosis.

Looking at the support of the abdominal viscera from a slightly different point of view, we see the cervical fascia, attached above to the base of the skull, continued downward as the pericardium, giving support to the dome of the diaphragm. From the diaphragm is suspended the stomach by means of the liver and lesser omentum; and from the stomach, the transverse colon by means of the great omentum. In the round-shouldered stooping attitude there is lack of tension on the cervical fascia, dropping of the dome of the diaphragm, and therefore prolapse of the stomach and transverse colon, aided, of course, by the relaxed abdominal muscles, flabbiness of the omentum and atony of the muscles involved. This constitutes mid-line ptosis.

The support of the right kidney is intimately associated with that of the hepatic flexure of the colon, as we have seen, and therefore prolapse of the kidney is always associated with ptosis of the hepatic flexure and ascending colon and cecum mobile. This constitutes right-sided ptosis. These two forms of ptosis may be associated or occur separately.

Two conditions must be mentioned which are frequently associated with visceral ptosis, namely, Lane's[6] kink and Jackson's[7] membrane. There is wide variation of opinion as to whether these are directly concerned with the ptosis or are merely coincidences.

Lane[6] himself considers the ileal kink the result of ptosis of the cecum, with the resulting crystallization of the lines of strain into peritoneal adhesions. Coffey,[5] on the other hand, believes Lane's kink to be due to chronic inflammation not associated with ptosis.

Regarding the etiology of Jackson's membrane, there is again divergence of opinion. Jackson[7] supposed the condition due to infection from within the cecum. Mayo[8a] believes this membrane formation to be the result of late rotation of the colon, and descent of the cecum from its hepatic position after formation of the posterior parietal peritoneum. In this event the cecum burrows its way into its position in the right iliac fossa, investing itself with an extra layer of peritoneum, which ultimately becomes the pericecal membrane. Lane[6] ascribes the pericecal membrane to the same causes as the ileal kink, namely, the development of peritoneal adhesions to resist the prolapse of the cecum.

Etiology. The causes of ptosis generally agreed upon are:—

1. Defects in development.
2. Faulty attitude.
3. Deficient musculature.
4. Rapid loss of flesh.
5. Repeated pregnancies.

It is probable that none of these causes alone is ever responsible for prolapse of any of the viscera. Certain individuals seem to be predisposed to ptosis by hereditary peculiarities of physique or congenital defects in development. The flat chest and straight spine may be inherited. Among the congenital defects in development which have been noted are:—

1. Failure of the colon to rotate completely into the right flank and carry its mesocolon across the front of the right kidney, depriving that organ of one of its most important means of support.
2. Failure of complete fusion between the right meso-colon and the posterior parietal peritoneum, resulting in cecum mobile.[9] This occurs in 20% of all individuals.
3. Failure of the layers of the great omentum to fuse, allowing prolapse of the transverse colon.

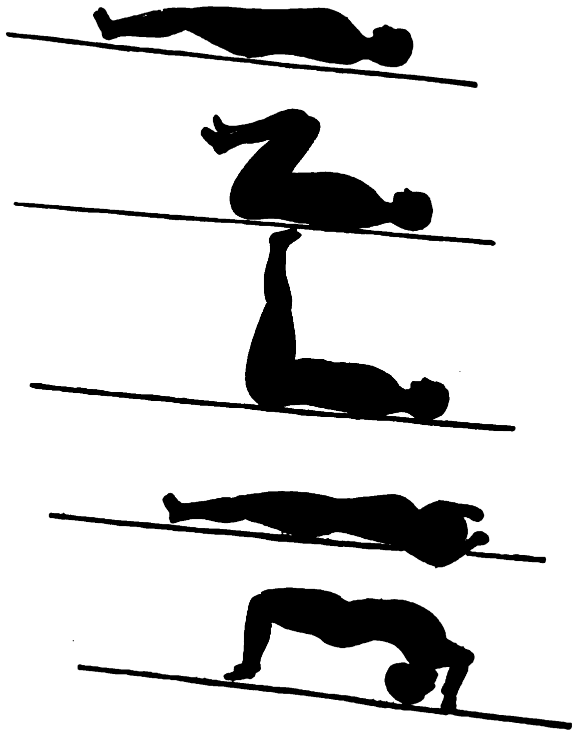


FIG. 4.

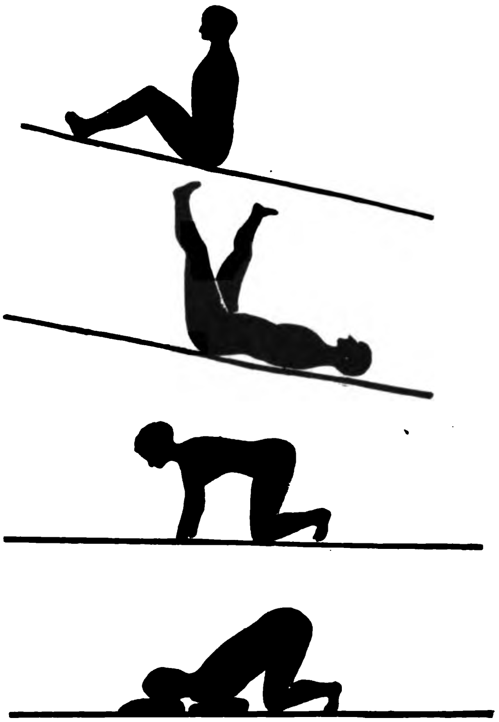


FIG. 5.

FIGS. 4 AND 5.

MARTIN'S EXERCISES.

All of these with the lower extremities require the fixing of the pelvis upon the trunk which is done by the muscles of the abdominal wall.

The first figure shows the position of the patient ready to begin the exercises.

Exercise 1. Flexion of the thigh upon the abdomen and the knees upon the thighs, brings into play, in addition to the muscles of the abdominal wall, the quadriceps extensor, hamstrings and iliopsoas.

Exercise 2. Flexion of the thighs with the legs extended brings into action the abdominal muscles, the iliopsoas and quadriceps extensor.

Exercise 3. Forced inspiration and expiration with the arms above the head. This brings into use the abdominal muscles as muscles of respiration, but particularly exercises the diaphragm, intercostals, pectorals, sternomastoid, trapezius and deltoid, as well as the muscles of the arm. Martin considers this the most important of all the exercises, and alternates it with each of the other exercises.

Exercise 4. Raising the trunk upon the heels and hands develops nearly every muscle in the body, but especially the muscles of the back and upper and lower extremities.

Exercise 5. Raising trunk to sitting posture. This brings into play all the abdominal muscles, but chiefly the rectus.

Exercise 6. Adduction and abduction of the lower extremities, the thigh being flexed on the abdomen and the legs extended. This requires the use of all the abdominal muscles to fix the pelvis upon the trunk, but especially exercises the adductors, the obturators and pyriformis, and of course the quadriceps extensor and iliopsoas.

Exercise 7. Inspiration and expiration on the hands and knees.

Exercise 8. Inspiration and expiration in the knee-chest position.

These two exercises are designed for women with retroverted uteri, the position and upward movement of the diaphragm tending to draw the uterus into normal position.

When in an individual predisposed by defective development, deficient musculature and faulty attitude occur, ptosis is inevitable. Rapid loss of flesh and repeated pregnancies exaggerate the condition.

Symptomatology. The symptoms of visceral ptosis may be divided into three groups:—

1. Gastric and intestinal stasis.
2. Pain due to tension on mesentery and peritoneum.
3. Neurasthenia.

Of the symptoms due to stasis, obstinate and prolonged constipation is the most pronounced. After this come gas formation in stomach and intestines, gastric distress, loss of flesh and strength, lowered muscular tone, and staining of the skin. The prolapsed stomach presses on the pancreas and interferes with its secretion, explaining many of the gastro-intestinal symptoms. The type of chest and the general malnutrition render this class of individual more susceptible to pulmonary tuberculosis and other infections.

Goldthwait[2b] has suggested that infectious arthritis may be due to absorption of toxines from the small intestine, the absence of pancreatic juice, which exerts an antiseptic action, allowing increase in bacterial growth.

The pain in visceral ptosis, aside from that due to disturbed digestion, is usually referred to the region of the umbilicus or lower abdomen, with the exception of that caused by movable kidney.

Of the neurasthenic symptoms it is hardly necessary to speak. In the most advanced cases they may be referred to every organ of the body.

Diagnosis. The diagnosis presents no difficulty, the characteristic enteroptotic figure being easily recognized. The x-ray and bismuth meal offer an exact method of determination of the degree of ptosis and stasis.

Treatment. Treatment may be considered under four heads: Medical, Gymnastic, Mechanical, Surgical.

Medical treatment should be directed to the improvement of the general condition, especially by proper diet, and to the relief of individual symptoms, especially that of constipation. For the relief of this symptom nothing is so efficacious as the lubrication of the intestinal tract with liberal doses of the mineral oil known under the names of "liquid paraffine," "Russian oil," etc.

Gymnastic treatment may be said to include posture, exercises, and massage. The most careful attention should be paid to posture, correcting the drooping shoulders, the forward bend of the spine, and the protuberance of the abdomen. This is equally as necessary while sitting and lying as while standing. The patient should sleep without a pillow on a fairly hard bed; the effect of a pillow being to push the head forward, contracting the upper part of the chest, and relaxing the cervical fascia. The use of the Trendelenburg position is of value at times in the temporary relief of symptoms due to the stasis.

Of the mechanical methods of treatment, the corset is the most valuable. A good corset should have the following characteristics:

1. It should be short behind, especially at the top.
2. It should be long in front, especially at the bottom.
3. It should fit tightly about the pelvis.
4. It should fit loosely at its upper extremity.
5. It should lace in front.

Such a corset will throw the center of gravity backward, as shown by Reynolds and Lovett.[10] The proper application of the corset is of the utmost importance. It should be applied in the recumbent, or, better, Trendelenburg, position. It should lace in three sections, the lowest one very tightly, the middle less tightly, and the upper should produce no pressure whatever.

The various appliances for the relief of floating kidney have been universally unsuccessful because they have been designed without regard to the ptosis, of which the kidney is only a part. A well-fitting corset, by producing backward and upward pressure on all the viscera, will give better results than any of the special apparatuses for floating kidney.

Surgical Treatment. The great difficulty with the surgical treatment of ptosis is the multiplicity of conditions to be rectified. Coffey[5] gives the following list of operations which may be indicated.

Operation for Lane kink.
Operation for cecum mobile.
Operation for movable kidney.
Coffey's operation on great omentum.
Beyea's operation on lesser omentum.
Shortening of falciform ligament of liver.
Operations for changing shape of abdomen. (*a*) On lower abdomen. (*b*) On upper abdomen.

To these may be added removal of Jackson's membrane, appendectomy, operations on the female pelvic organs and perineorrhaphy. Concerning the operations of Kellogg[11] and Martin[12] on the ileo-cecal valve, we can only say that they are too experimental for discussion at present.

Operation for Lane kink as performed by Coffey[5] consists in division of the constricting band and shortening of the upper leaf of the mesentery.

There are a number of operations designed for cecum mobile. Wilms[9] splits the peritoneum in the right flank and then buries the ascending colon, making it retroperitoneal. Coffey[5] and others simply suture the cecum to the posterior parietal peritoneum at the proper level.

Where Jackson's membrane is present, removal of the membrane, especially at the constricting portions, is the operation most universally done, although Connell[13] twists the membrane into a rope, which he passes through the peritoneum at the outer side of the colon, and after drawing it through the muscle sutures it to the aponeurosis, forming a suspensory ligament for the cecum.

Of the operations for movable kidney it seems hardly necessary to speak.

Coffey[5] has devised an operation for shortening the falciform ligament of the liver by a series of purse-string sutures. He also sutures the liver itself to the peritoneum by sutures passing through the liver on either side of the notch made by the termination of the umbilical fissure.

Beyea[14] plicates the lesser omentum by a series of purse-string sutures.

Coffey suspends the great omentum, and by it the stomach and transverse colon to the anterior abdominal wall, by a series of sutures passing first through the peritoneum, near the original point of entrance. This line of sutures, usually about eight in number, runs transversely across the abdominal wall, being placed at such a level as to raise both the stomach and the transverse colon above the umbilicus.

In addition to these Coffey[5] has devised two very ingenious operations for restoring the respective proportions of the upper and lower abdomen. The operation on the lower abdomen is as follows: An incision is made through the aponeurosis of the external oblique parallel to its fibres, and two to three inches above Poupart's ligament. The aponeurosis is separated from the underlying muscle for a distance of three inches above the incision, and then the upper part is overlapped over the lower and held by a row of mattress sutures. The same operation is performed on the opposite side. The diameter of the lower abdomen is considerably reduced by this operation.

The technic of Coffey's operation for expanding the upper abdomen is as follows: The abdomen having been opened by a high median incision to perform the various plication and suspension operations previously described, the peritoneum is closed as usual. Instead of uniting the fascia along the line of incision, however, the anterior rectus sheath is split one inch or more outside, and an aponeurotic flap dissected up and reflected toward the median line, the reflected edges being brought together instead of the edges of the original incision, thus giving a considerable increase in the circumference of the abdomen. The denuded anterior surface of the rectus is not covered in except by the subcutaneous fat and skin, which are united in the usual manner, sometimes a small drain being inserted down to the fascia.

Lane[6a] in cases of marked ileal stasis removes the entire large intestine except the rectum, uniting the ileum to the rectum by lateral anastomosis, thus getting rid of the stasis with its resulting auto-intoxication. The reader will be well repaid by a perusal of some of his papers, references to a few of which are given below.

Operative Results. Opinions differ widely. Coffey[5] reports 41 cases treated surgically by various combinations of the procedures mentioned. Of these, 26 were symptomatically cured, 9 much improved, 4 somewhat improved, 1 unimproved, 1 died.

Rovsing[15] sewed the stomach itself to the abdominal wall in 75 cases, in 22 of which he suspended the liver also, with good results.

J. G. Clark[16] reports 55% of successes after the Coffey operation.

On the other hand, W. J. Mayo[8b] says that "only a small number should be treated surgically. These patients are embryologically wrong."

Reynolds[17]: "Operation should be undertaken only when the surgeon has convinced himself that the local lesion is the cause of the symptoms and that the symptoms will be relieved by the operation."

R. R. Smith[4a] performed various pelvic operations on 51 cases suffering from enteroptosis, of whom 15 were entirely relieved, and all but two received some benefit, although 19 were not relieved nervously.

Ochsner[18]: "I consider enteroptosis of small surgical importance."

Joseph A. Blake[19] says: "There are two classes of cases:—

"1. Those in which ptosis of an organ contributes to the neurasthenic state simply by the effect on the organ itself (kidney, uterus, stomach). In this class the result of an operation depends on the degree to which the condition provokes or affects the neurasthenic state.

"2. Those in which a vicious circle is established (general splanchnoptosis). Operation in this class must relieve the auto-intoxication; and excision or exclusion of the colon is the only rational procedure."

Conclusion. The conflicting evidence reviewed in this paper is proof that none of the various methods of treatment has proved universally satisfactory. It is fair to say, however, that but few men have carried out any of the outlined procedures with the vigor ordinarily applied to the treatment of other pathological conditions. Concerning the surgical treatment, the amount of work so far done is too small upon which to base an opinion. The number of surgical procedures which a single case demands must prohibit operative treatment in a considerable proportion of cases. Gymnastic treatment must be of great benefit early in the process, but unfortunately the anatomical changes are so extensive in advanced cases that but little help can be expected from exercises.

Corsets, although of course only palliative, and never quite relieving the patient's symptoms, nevertheless are of much value, and probably in advanced visceral ptosis will continue to give more comfort than anything else.

The greatest prospect for improvement lies in prophylaxis, as pointed out by Goldthwait. Certain individuals are predisposed to ptosis by anatomical peculiarities. These patients should be easily recognized by their tendency to the ptotic figures, and by general muscular insufficiency. Such persons taken early in life, their attitude corrected, and their muscles developed by exercise and proper food, it should be possible to prevent the development of extreme cases of visceral ptosis.

REFERENCES.

[1] Glénard: Lyon Méd., 1885, xlviii, 492.

[2] Goldthwait: (a) Surg., Gyn. and Obst., 1913, xvii, 587; (b) BOSTON MED. AND SURG. JOUR., 1910, clxii, 695; (c) *Ibid.*, 1909, clxi, 839.

[3] Martin: (a) Surg., Gyn. and Obst., 1911, xii, 84; (b) *Ibid.*, 1908, vii, 638; (c) Trans. Am. Gyn. Soc., 1912, xxxvii, 133.

[4] Smith: (a) Trans. Am. Surg. Asso., 1910, xxviii, 502; (b) Jour. A. M. A., 1910, lv, 1860.

[5] Coffey: Surg., Gyn. and Obst., 1912, xv, 365.

[6] Lane: (a) Surg., Gyn. and Obstet., 1908, vi, 115; (b) *Ibid.*, 1910, xi, 495; (c) *Ibid.*, 1911, xii, 221.

[7] Jackson: Surg., Gyn. and Obst., 1909, ix, 278.

[8] Mayo, W. J.: (a) Surg., Gyn. and Obst., 1911, xii, 228; (b) Trans. Am. Surg. Asso., 1912, xxviii, 523.

[9] Wilms: Deutsche med. Wochenschr., 1908, xxxiv, 1756.

[10] Reynolds and Lovett: Jour. A. M. A., 1910, liv, 1033.

[11] Kellogg: Surg., Gyn. and Obst., 1913, xvii, 563.

[12] Martin: Suffolk Dist. Med. Soc., 1914.

[13] Connell: Surg., Gyn. and Obst., 1912, xiv, 192.

[14] Beyea: Phila. Med. Jour., 1903, i, 257.

[15] Rovsing: Volkmann's Samml. Klinik, 1907, Nr. 481.

[16] Clark: Trans. Am. Surg. Asso., 1912, xxviii, 517.

[17] Reynolds: Trans. Am. Surg. Asso., 1910, xxviii, 478.

[18] Ochsner: Jour. A. M. A., 1910, lv, 1865.

[19] Blake: Trans. Am. Surg. Asso., 1910, xxviii, 494.

A FEW NOTES ON THE TREATMENT OF ANTEPOSED UTERI.[*]

BY HENRY T. HUTCHINS, M.D., BOSTON.

THE mass of literature relative to malpositions of the uterus is enormous. Has there ever existed a surgeon, interested in gynecology, who has not at some time or other written his share and perhaps more than his share, on this subject? Several years ago I resolved that whatever I might write relative to any gynecological subject, the discussion of uterine malpositions was a completed chapter and I would never burden my hearers with additional theories in this field, but I have become thoroughly convinced that a large class of sufferers, the cause of whose symptoms has previously passed by unrecognized, can be relieved by surgical means.

---

[*] Read before the Obstetrical Society of Boston, Oct. 27, 1914.

For many years we have regarded an anteposed fundus as the normal position of the uterus, and a uterus found in this position as incapable of producing pelvic symptoms, especially those of low sacral backache, pelvic drag and pelvic congestion. That the classical symptoms of retroposition of the fundus not only can, but frequently are, caused by a uterus in anteposition, I believe to be true.

In the diagnosis of the cause of low backache and the common symptoms of pelvic drag and discomfort, the gynecological and orthopedic surgeons ought more frequently to work together. A great deal is being written at present on the symptomatology and treatment of various degrees of ptosis of the abdominal organs, chiefly in the female patient. In this discussion, one organ, the uterus, has received but scant attention from the point of the clinical diagnosis from existing symptoms. The retroposed uterus is commonly accepted as a definite cause of backache and pelvic drag. The anteposed uterus is as universally regarded as incapable of producing these symptoms, and when the fundus is found to be in the forward position another cause for the patient's symptoms is usually sought.

Various degrees of retroposition are spoken of as "a uterus in first, second, or third degree of retroposition." The anteposed uterus has received but little attention from a symptomatic standpoint. My attention was called to this fact by the appearance of many patients in my clinic complaining of low sacral backache and feelings of lack of low abdominal support, pelvic drag, etc., in whom on examination the fundus was found to be anteposed. At first I was at a loss to explain these symptoms, which occurred as frequently in women who had not borne children as in those who had. This led to a study of the anteposed uterus in all cases, both when seen at the time of examination and also during the course of many abdominal operations for pelvic diseases. It was soon seen that the anteposed uterus was capable of as wide excursions from the normal as the retroposed. So many cases appeared with retroposed fundus who had no symptoms of backache and pelvic drag, that I came to disregard the position of the fundus entirely in making my diagnosis and began to confine my attention to the relative position of the cervix only, in relation to the pelvic frame. It was then found that anteposed uteri did not occupy a fixed position in relation to the pelvis, but they were found to be in varying degrees of ascensus and descensus, according to the stability of the cervical supports. Some were found to be held snugly up to the symphysis with the bladder and anterior vaginal wall well supported, while others were found to have dropped back toward the hollow of the sacrum, while still maintaining their anteposed positions. In considering these cases, I refer only to those cases of descensus in an antero-posterior direction, and not those of beginning prolapse with rotation toward the pelvic outlet, which cases form quite another and distinct class.

On further investigation, it was found that in every case of what I have termed an "anteposed uterus in descensus" which presented the symptoms of a retroposition, it was possible, by properly placed tampons which forced the uterus as a whole well upward, relieving the drag on the cervical supports, to relieve the patient of all her symptoms. The placing of tampons being a temporary expedient, I determined to operate and suspend these uteri for permanent relief, although heretofore I had never opened the abdomen for the purpose of suspending an anteposed fundus. At the same time a further study of these cases was begun in the hope of finding other causes for the symptoms, and this study was carried out in the operating room after the abdomen was opened.

Opening the abdomen by a generous incision and widely retracting the wound, the pelvis is exposed by gently drawing back the intestines without disturbing the relations of the pelvic organs. On inspection, the following conditions are noted: In cases where the uterus as a whole is well held up in the pelvis by its cervical supports, *whether the fundus is in anteposition or retroposition*, there will be (1) no fullness, congestion or dilatation of the ovarian and anastomosing veins as they run through the infundibulo-pelvic and broad ligaments; (2) there will be present no drag on the parietal peritoneum covering the lateral walls of the pelvis, especially that part covering the infundibulo-pelvic ligament; (3) there is no tension on either the round or utero-sacral ligaments, which in turn are covered by parietal peritoneum; (4) there is no descent of the bladder nor engorgement of the vesicle veins.

Quite a different picture is presented in that group of cases in which the cervical supports have given away and the uterus as a whole has descended into the bottom of the pelvis, still without regard as to whether the fundus is anteverted or retroverted. In this group of cases we see on inspection: (1) the ovarian and anastomosing veins full, congested and dilated, forming a so-called varicocele of greater or less intensity. This fullness and distention extends throughout the pelvic portion of these veins, but it will be noticed ends abruptly as the veins cross the posterior pelvic brim from which point upward they are normal in size. (2) The infundibulo-pelvic ligament and parietal peritoneum are put decidedly on the stretch, the chief drag coming from the posterior part of the pelvis at or near the attachments over the sacro-iliac joint. (3) The round and utero-sacral ligaments share in this drag. (4) The bladder has gone down with the descent of the cervix and the vesical veins have shared the general pelvic engorgement.

As striking as this picture is, still more striking is the picture presented by the following manipulations. Grasping the anteposed but descended uterus with forceps and bringing it up to the point where the suspension is to carry it, the following results are visible: (1) The ovarian veins and their anastomotic branches, being relieved of tension, immediately empty themselves and become normal. (2) The pull and drag on the sensitive parietal peritoneum is completely released. In a moment we can see exactly what our suspension is going to accomplish before we perform it. As like results are accomplished whether the fundus is forward or back, provided the uterus is in descensus, it follows that it is the descensus alone and not the version of the fundus which is the leading factor in the diagnosis of these conditions. The cervix remaining as a well suspended, fixed point, it matters not symptomatically whether the fundus is forward or back. But let the cervical supports give way and the uterus as a whole descends in the pelvis. This descent cannot take place except at the expense of pulling the parietal peritoneum and the blood vessels contained in it, and putting these structures on a stretch from the brim of the pelvis downward. The ovarian veins are the chief sufferers. They return most of the blood from the pelvic organs to the general circulation. They are long veins, they enter the vena cava and renal vein high in the abdomen and contain no valves. They have a great deal of work to do and are poorly equipped to do it. When the pelvic drag comes, stasis takes place below the point where the veins cross the pelvic brim and the blood is with difficulty returned, resulting in an engorgement of these vessels below this point. The parietal peritoneum is extremely sensitive to tension and in the cases we are discussing, this tension is greatest at the posterior pelvic brim. These two factors fully account for the symptoms produced by a uterus in descensus.

These facts have led me to suspend many anteposed uteri when symptoms have persisted which I have heretofore attributed only to retroposed uteri, but with very satisfactory results.

If, on examination before operation, the cervix is found low in the pelvis, the uterus as a whole low, whether the fundus is forward or not, and if the lower supports have given way, the pull must necessarily come, in some measure, on the parietal peritoneum which covers and forms a large part of the pelvic ligaments. Especially is this true with the infundibulo-pelvic ligament containing the ovarian vessels. Thus even an anteposed uterus, providing it is in descensus, may readily cause sacral backache and the bearing-down pains and feeling of fullness and weight due to partial occlusion and congestion of the ovarian veins. If one is in doubt as to whether an anteposed uterus is causing these symptoms or not, he has only to properly place a vaginal tampon which will force the cervix up and hold it in position for forty-eight hours and note the result. If the symptoms of drag and backache are relieved by this procedure, then the surgeon is fully justified in suspending an anteposed uterus. It is the recognition of these symptoms *without* the presence of a retroposed fundus which is important. I have come to regard the position of the *fundus* as of little moment symptomatically, but I always determine the relative position of the *cervix* in the pelvis and base my judgment of whether a suspension is necessary or not upon the amount of descent of the cervical portion. I will cite only two cases:—

Case 1. Mrs. B., 41 years old, 3 para. Chief complaint was sacral backache. She had not been able to sleep on her back for five years on account of this sacral backache which was just as bad when lying in that position as when on her feet. This is an important point and would be expected from the conditions above described, as there is no less drag when a patient is on her back than when she is on her feet. The night before operation she did not rest at all on account of this severe backache. Upon examination I found a relaxed perineum and lacerated cervix. The uterus was of normal size and anteposed, but the organ as a whole was in marked descensus in the pelvis. Again the term descensus must not be confused with the term prolapse. There is no prolapse in these cases and the cervix does not approach the introitus. By descent I mean a falling directly backward toward the hollow of the sacrum when the patient is in the dorsal position. I do not mean a rotation toward the outlet which is a much later stage, and an entirely different condition. The doctor who had referred the case did not believe a suspension should be done because the uterus was not retroverted. The patient had, however, every symptom of a retroversion, and believing that the repair of the lacerations alone does very little good in these cases, *i.e.* does not reach the cause of the trouble, the abdominal operation was urged and accepted. After repairing the cervix and perineum, the abdomen was opened and just the conditions above described were found. It was possible to demonstrate in a moment what the actual result of a suspension of even an anteposed uterus which is in descensus would bring about. The ovarian veins between the uterus and pelvic brim were engorged and dilated, while above the pelvic brim they were collapsed. The sensitive parietal peritoneum covering the infundibulo-pelvic ligament was tense and the pull came from a point just over the sacro-iliac joint. As the anteposed but descended uterus was raised, and the pressure at the pelvic brim relieved, the veins immediately emptied and the peritoneum relaxed.

From the moment the patient came out of ether she was relieved completely of her backache, which she had had for five years, and she has had no return. She had not the slightest backache even the first night after operation, nor during her entire convalescence.

The second case was that of a young married woman, 26 years old, who had never had children. The same condition was found, an anteposed uterus in descensus, the same drag and congestion of ovarian veins demonstrated, and the same result after operation.

To offset these cases I will mention another, a woman, 38 years, two para., who also had sacral backache. The uterus was anteposed, and as her physician felt strongly that an abdominal operation was not necessary, I did only the plastics. She is at a loss to know why her backache is no better after the operation as she had been assured by her physician that it would disappear. This anteposed uterus should have been suspended.

The symptom of sacral backache is so common in women who have borne children and in women who have not, that it deserves close attention. Mistakes in diagnosis are made by us all. Many backs have been strapped, plaster jackets applied, belts worn, etc., by women with sacral backache in whom no retroverted uterus was found, but in whom descensus of an anteposed uterus was not recognized, and on the other hand many retroverted uteri, still well held up by the cervix, have been suspended when the patient should have had treatment by the orthopedic surgeon.

The observations made at the time of operation and the results that have been obtained by operation, have led to the conclusion that sacral pain and backache may be caused by a uterus in descensus regardless of the position of the fundus, provided that by this descent the pull is transmitted to the parietal peritoneum covering the ovarian vessels, forming the so-called infundibulo-pelvic ligament, and that *with* this pull there is present a stasis in the ovarian and anastomosing veins. This possibility should be borne in mind when examining a patient, whether the fundus is forward or not, and the amount of the descensus noted. A moment taken at the time of operation to inspect structures *in situ* is well spent and may lead to a more beneficial operative procedure than by following an accustomed routine. The effect of a suspension of the uterus should be noted as far as possible before the method of performing that suspension is determined upon.

It is far from my wish to leave the impression that every uterus, whether anteposed or retroposed, needs a suspension. As a matter of fact, the more clearly I differentiate my cases, the more conservative I become as to advising a suspension. Although the fundus may be retroposed, if the cervix is well held up, these cases seldom give symptoms and do not need any operative treatment. On the other hand, one should not hesitate to suspend a uterus already anteposed, provided the drop of the cervix with following descensus is present.

In summing up the situation it seems reasonable to conclude: (1) The position of the fundus is of little importance from a symptomatic standpoint. (2) Descent of the cervix, irrespective of the position of the fundus, causes drag on the parietal peritoneum of the pelvis with congestion of the ovarian veins. (3) We must recognize this descent as a symptomatic factor and not hesitate to suspend an anteposed uterus when such descent is present. (4) In every case, before operating, we should prove by temporary means to the patient's and to our own satisfaction, that the malposition is the cause of the patient's symptoms. We will then suspend only those few selected cases where a suspension is necessary.

Medical Progress.

PROGRESS IN OPHTHALMOLOGY.

BY EDMUND W. CLAP, M.D., BOSTON.

RUPTURE OF THE GLOBE.

Fuchs calls attention to a class of ruptures of the eyeball often not recognized as such. Of course the ordinary ruptures from a heavy blow occur usually in the sclera concentric with the corneal margin and a little back from the limbus and are 10 to 12 mm. in length. They are most frequent above or above and nasal, rarely to the temporal side. The uniform location of these ruptures in spite of the variety of trauma which causes them is due to the weakness in the region of Schlemm's canal and the place where the anterior ciliary vessels penetrate the sclera. The internal break is there, while the external is further back, the tear is oblique. But there is another variety of rupture often overlooked. These are small, seldom greater than 2 to 4 mm., and while the internal break is at Schlemm's canal the external tear is at the limbus or even partially in the transparent cornea viz. perpendicular to the cornea or even obliquely towards the center of the cornea. These ruptures too, instead of being under the conjunctiva, invariably tear the conjunctiva. Almost constantly we find a small prolapse of iris. The internal injuries are less than in the case of typical rupture, hyphaema, small tears of iris or a partial iridodialysis and sometimes a rupture of the zonula of Zinn occur. Rupture of lens capsule is shown by a clouding of the lens coming on within a few weeks. This small rupture is more common in young people than in old. The prognosis is good, infection being rare. The prolapse should be excised and the iris replaced, which can be done unless a week has passed since the injury. Besides these, cases of incomplete rupture can occur in which a break happens at the canal of Schlemm and involves some inner layers of the sclera. The diagnosis is made certain later if a thin bluish line appears concentric with the limbus, which region may later become ectatic and the eye show increased tension. The pupil is often drawn up towards the rupture too.

BRAWNY SCLERITIS.

Stephenson reports a case and gives an excellent summary of what we know about a rare disease first fully described by Schlodtman from Fuchs' clinic as Brawny Infiltration of Conjunctiva and Sclera. I quote Stephenson's review as follows: Brawny scleritis has been called annular scleritis and gelatinous scleritis. It is a disease of middle life or old age and affects men more often than women. It runs a very chronic course with exacerbations of pain, lacrymation, photophobia and increased redness. At first a painless inflammation without known cause affects the anterior segment of the globe usually in both eyes though not perhaps beginning at the same time. The early stage may involve one portion of the circumference, though sooner or later there is a girdle about the cornea not extending beyond the curvilinear line which marks the attachment of the recti tendons. The infiltration is gelatinous and succulent, diffuse and has a reddish brown hue and is not usually nodulated unless the inflammation involves the insertion of the recti muscles. In the further course of the disease the infiltration spreads into the cornea, taking the form of a sclerosing keratitis. The anterior segment of the uveal tract becomes involved usually late in the disease as indicated clinically by keratitis punctata, posterior synechiae, occlusion of the pupil, vitreous opacities and lowered tension. Many of these eyes have come to pathological examination and in general dense infiltration of the sclera with mononuclear leucocytes and some polynuclear cells was found by all observers. Destruction of some lamellae of the sclera, giant cells and areas of fatty degeneration, peri and endarteritis have been present. Verhoeff pointed out that the findings in all reported cases are suggestive of syphilis. The appearance and course of the disease are fairly typical. Gumma of the sclera is an equally rare condition and would not be as diffuse nor would it last for years without breaking down. It would yield to proper treatment. Gunn described a monocular, probably gummatous infiltration of conjunctiva and episcleral tissue associated with secondary syphilis and promptly disappearing under antisyphilitic treatment. This occurred in young people only and showed a zone of semi-translucent swollen conjunctiva of a pink or red color surrounding the cornea. Other writers have described a similar condition but it should not be confounded with brawny scleritis.

JUVENILE GLAUCOMA.

Löhlein has made a very extensive study of juvenile glaucoma and sums up as follows: Under juvenile glaucoma we include primary glaucoma of young people, sharply distinguished clinically from congenital hydro-phthalmus and perhaps more arbitrarily from glaucoma of adults. We may draw the line at 35 years. Löhlein had ten cases of his own and collected 82 published cases. A few cases occur between the fifth and the tenth years, but a much greater number between 15 and 20, 40% of the cases occurred here, 10 myopic and 17 hypermetropic ones. Contrary to the incidence in adult glaucoma more males were affected than females and this is true also of buphthalmos. Sixty-two percent of all the cases were glaucoma simplex. Of all the cases 50% were myopic and a third of these had a myopia of more than six diopters while in glaucoma of adults myopia appears in not more than 15%. The statement that juvenile glaucoma is frequently monocular finds no support. It occurred in on eye only in 20%, which agrees with Wecker's statistics for adults. The resistence and power of adaptation of the tissues of youth accounts for a frequently very long prodromal stage. The passing of a regular astigmatism into one against the rule with the increasing tension would tend to contradict Schmidt-Rimpler's view that the astigmatism against the rule coming on in adults with glaucoma does not arise from the increased pressure but is merely a change of advancing age. Of course many cases of glaucoma in young people follow exactly the course of the disease in adults. One-fifth of the cases have the type with a deep anterior chamber and this variety may be a late modified buphthalmos. The frequency of myopia is explained by the increased tension causing an axial myopia in these young eyes from stretching.

Heredity plays a great rôle in our cases for although not inquired into in all cases it is mentioned in 20%. The cause of most of the cases of juvenile glaucoma which are not simply adult glaucoma occurring in youth is to be found in some congenital defect or anomaly of development. In 50% we find defects such as persistent hyaloid artery, coloboma of iris, of lens, of nerve and lamellar cataract, all of which point to some fault of development which may also give rise to the glaucoma.

In the discussion of Löhlein's paper, Fuchs gave this classification of juvenile glaucoma: (1) True glaucoma with shallow anterior chamber in members of a family in which the disease is common and appears early. This type is identical with senile glaucoma. It is hereditary and familial; (2) Glaucoma caused by congenital malformations as buphthalmos; (3) Glaucoma with deep anterior chamber and myopia; (4) Glaucoma with deep anterior chamber and fine punctate keratitis, this is a secondary glaucoma but when the precipitates on Descemet's membrane are absent, it may be taken for a primary glaucoma.

RADIUM IN OCULAR THERAPEUTICS.

Koster has secured favorable results from treatment of various eye diseases with radium and mesothorium. He began in 1905. After trying various methods he now uses a small glass tube containing five milligrams of radium bromide or four milligrams of mesothorium, though on the lids he sometimes uses a little ebonite box. The tubes are of thermometer glass with a little bulb blown on the end. Parenchymatous keratitis is treated from one-half to an hour, five to ten sittings with intervals of three, five, or seven days, according to the irritation. The cornea is not actually touched. The results were extremely favorable though other methods of treatment were used too. Leucomata of the cornea can be much thinned and if not too thick to begin with, the sight is much improved. Scleritis is favorably influenced in connection with other treatment. Not much result was obtained in retinitis pigmentosa or optic atrophy. When the sight is blurred by products of past inflammation the radium treatment of the back of the eye has a good effect. Vitreous opacities and hemorrhages clear up considerably. Cataract secondary to uveitis or chorioditis is favorably influenced but ordinary senile cataract is probably not changed by this treatment. Naevus pigmentosus and xanthelasma both disappear under treatment and epitheliomata were very successfully treated. All these diseases are either inflammations or hypertrophic growths, which accounts for the favorable action of radium in so many conditions.

Mattice reports the treatment of an epithelioma of the cornea with the barium carbonate salt of radium. A mica box container was applied to the tumor mass for six minutes and in a week a twelve minute application was made. Six weeks after the first treatment the tumor remains were given a fifteen minute exposure. The tumor which had covered the cornea and involved the conjunctiva had disappeared and the vision had improved from light perception to twenty-seventieths.

ETIOLOGY OF CHRONIC UVEITIS.

De Schweinitz at the seventeenth International Congress of Medicine discussed the pathogenesis of chronic uveitis excluding the syphilitic, tubercular and sympathetic varieties, deriving his material from an analysis of the literature for ten years past, an investigation of the views and experiences of American colleagues and a study of gastro-intestinal and autointoxication in relation to this affection. The frequency of primary uveitis varies from .9% to 2.4% and it seems more common in northern than in southern climates. As Stephenson said probably every case is of septic or of toxic origin. The infection may be exogenous or endogenous. After careful analysis of all described etiological factors he reaches the following general conclusions. Acute articular rheumatism is rarely if ever a cause of uveitis but various types of polyarthritis and myalgia may be associated with it, and be manifestations of the same toxemia. We should not yet abandon the view that the same cause that produces gout may also produce a chemical inflammation of the uveal tract. It is possible that diabetes more rarely may do the same. There is bacteriological and clinical evidence that the majority of cases of uveitis are caused by micro-organisms or their toxins. The gonococcus and the staphylococcus are the most important and the primary source of the latter is most frequently a chronic septic process in the mouth, tonsil, naso-pharynx, accessory nasal sinuses, in the uterine cavity or in the skin (boils, etc.) It is probable that in most instances living bacteria reach the uveal tract and they and their toxins cause the varieties of inflammation classified under the term uveitis. Indican in excessive amounts in the urine indicates intestinal putrefaction but other analyses must be made and if intestinal putrefaction dependent upon bacterial activity is present there is a source from which toxins may arise to cause uveitis. A thorough investigation of every patient's metabolism may lead to the finding of a group of diseases of the uveal tract caused by infections of bacterial origin arising in the intestinal tract.

DILATATION OF PUPIL FROM CORNEAL SCAR.

Zur Nedden has noticed that in superficial injuries leaving a large central scar of the cornea, the pupil of the injured eye often becomes larger than the pupil of the sound eye.

His cases occurred mostly after infected ulcers of the cornea which left a central dense scar covering the normal pupillary area. Of course aniscoria frequently occurs without any apparent cause or it may be due to diseases of the nervous system. But his cases had been under observation either before the injury or after the scar was freshly formed and no difference in the size of the pupils observed. The author carefully excluded any disease that could cause the aniscoria in his cases, or any weakening of the pupillary muscle from use of a mydriatic. In all of his cases the reactions of the pupil were prompt and normal in both eyes but the pupil of the affected eye was one and one-half to two millimeters larger in diameter and preserved this relative difference in shadow or in light or during convergence. This difference in size of the pupils came on only after a year or more; it was not seen three or four months after the injury. It was not observed in peripheral or eccentric scars, or in such large central ones that the eye was practically blind. The vision in these cases was decidedly improved by the larger pupil and this without any thinning of the scar. In two cases where the scar did get thinner the pupil remained larger. The author thinks it may be an attempt of nature to get better vision. At any event, it does not occur in every eye where it might be expected.

PROGRESSIVE FAMILIAL MACULAR DEGENERATION.

Darier has published the history of five cases of progressive familial macular degeneration and reviewed the literature. Stargardt in 1909 gave the history of two families, one of four persons all affected, and a second in which three out of five were affected. In these families there was no other familial ocular disease, the parents were well and not related. The trouble began with a central scotoma for red and green at 12 to 15 years without any fundus lesion, next came a relative scotoma and then an absolute one for white, and finally total loss of central vision. The periphery of the field remained normal for white and colors. The ophthalmoscopic signs began with an irregularity of pigmentation in the macula, of greyish yellow spots. Blotches and whitish streaks appeared and pigment spots like osteoblasts. The yellowish spots ended by fusing into a single horizontal oval spot varying in size from one-third the papilla to two or three times its size. This spot was outlined by pigment and attained its maximum about the twentieth year and then remained a long time stationary. Jennings in 1909 reported three cases in the same family, the parents being cousins. Batten had a similar affection in two brothers out of seven children. Lutz in 1911 reported a family of nine children, four of whom rapidly lost their vision about the twelfth year. Little yellow-gray spots mingled with pigment were seen in and about the macular region. Stirling in 1912 reported three cases in one family and Nettleship, 1909, and Doyne, 1899, have seen similar cases. Stargardt recently gave three new cases from one family. Now from 23 cases altogether, we may describe the course of this disease. The affection beginning about the twelfth year is insidious and progressive though rarely sudden in onset. In Darier's five cases it was slow in onset and has now been under observation 20 years. One may find no lesions of the fundus at first, or at times macular changes may occur before vision is affected. Central vision is always impaired, fine characters are lost first. The two eyes are attacked at the same time and the vision is nearly the same in each eye and fails equally. In some cases the loss of vision is rapid for a time and then remains at the same degree for a long period; in others, the failure is gradual for from 10 to 30 years. Lesions outside the macular region are exceptional. Stargardt thinks the process is one of degeneration resembling that in idiotic family amaurosis. Batten's two cases are of the maculo-cerebral type which begins early and goes into dementia. If the macular changes do not appear till 12 or 14, the brain is not affected. Syphilis may be safely excluded as a cause. This hereditary fault has not yet been found in several generations.

THE ELLIOT OPERATION.

The Elliot operation of trephining the sclero-corneal margin for glaucoma has received a great deal of attention this year and its limits are being defined. The papers on this subject are so numerous (over 200 this year alone) that only a few of the more important can be quoted. The more conservative authors would limit the operation to cases of chronic glaucoma which cannot be controlled by miotics, but the majority would advise trephining in all chronic glaucomas, and many favorable results have followed this operation in acute glaucoma, but iridectomy is preferred by the majority for acute cases. The dangers of the Elliot operation seem to be, injury to lens at time of operation, detachment of chorioid, so-called quiet iritis during the healing, and late infection via the conjunctiva over the trephine hole. Stephenson discusses some causes of failure after the operation; occlusion of the trephine opening by proliferation of tissue, or blocking by iris or ciliary body, lens, or vitreous; and intraocular hemorrhage which is rarer than after iridectomy. Detachment of the chorioid is usually temporary and of course occurs also after iridectomy, Lagrange operation or even after cataract extraction. Quiet iritis occurs, too, after ordinary iridectomy though often overlooked. Its evils may be avoided if atropine is used 24 hours after operation if the pupil is not well dilated or active. The accident of having the trephined disk drop into the anterior chamber has happened without evil results several times but Stephenson had a case which was followed by severe irido-cyclitis. As the operation is more used more reports of late infection are published.

Col. Elliot's latest article deals with some points of technic and with some objections to the operation. He believes that the vesicular type of filtration scar is to be avoided and when obtained is due to faulty methods of making the flap or splitting the cornea. The fluid escape should not be confined to a small area at and just about the corneal opening. The vesicular scar may be abraded during movements of the globe and it may give rise to infection from any organism that may be in the conjunctival sac. The flap should be as large as possible, beginning at the fornix above and the extremities kept well away from the limbus. Next only a small area of the flap must be actually dissected up, narrowing down at the limbus to just enough to give room to split the cornea and place the trephine. If the tissue at the sides is undamaged there will be normal subconjunctival tissue for extended filtration and the flap will be held in good position when released so as not to need a stitch. As we approach the limbus we should work a little deeper so as to make the base of the flap thick enough to avoid a vesicular scar, and so, too, the cornea should be split along the inter-lamellar spaces, not merely cutting under the epithelium and Bowman's membrane. We cannot always avoid getting scars where the subsequent filtration is much more abundant in the region of the trephine hole, though this is not ideal, but we should not get a thin walled projecting vesicle whose cavity is in direct communication with the interior of the eye. Impaction of uveal tissue in the wound results from: (1) Undue traction during iridectomy, avoided by doing the iridectomy when the disc is cut, both disc and iris being seized together and cut off with the same snip of the scissors. (2) Sudden movement of the patient. (3) Forward movement of structures within, which mechanically push the iris into the trephine hole. (4) Iris being washed into the opening by the aqueous, this occurring after the patient has left the operating table. Col. Elliot thinks an iridectomy, a buttonhole opposite the trephine hole, should always be done. He thinks by using a 2 mm. trephine and not cutting the disc completely around we can regulate the size of the opening by completing the cut with the scissors, taking only part of the disc if we need only a moderate degree of filtration. The disc should be cut through completely at the corneal edge and hinged to the scleral side. Late infection has been reported in 14 cases so far and a great many trephinings have been done. Most of the cases are desperate and some risk is justifiable and the operation is not alone in having this danger.

THE EYE SYMPTOMS OF GENERAL PARALYSIS.

Uhthoff from a large experience sums up the eye symptoms occurring in general paralysis as follows: Optic atrophy in 8%, optic neuritis in 2%, Argyll-Robertson pupil in 44%, unequal pupils in 22%, miosis in 25%, irregular pupils in 25%, ocular muscle paralysis in 10%. This incidence of optic atrophy is the same as in tabes. In all cases of progressive optic atrophy he has found in 95% signs of either tabes or of general paralysis and some of the excepted 5% had escaped from observation, which means that progressive optic atrophy is diagnostic of either tabes or general paralysis. Cases that remain confined to one eye are rare and probably not true progressive atrophy, but are secondary to syphilis of the brain. In both tabes and general paralysis the optic nerve changes are the same and are always associated with changes in the spinal cord. Hemianopsia is rare and suggests syphilis of the base. Optic neuritis and choked disc are not due to the general paralysis, but to basal syphilis and to hydrocephalus. Uhthoff has not found characteristic macular changes. A unilateral Argyll-Robertson pupil has the same diagnostic importance as a bilateral. In recognizing anisocoria Uhthoff did not take into account slight differences in size of the pupil, which are common in healthy individuals as well as are slight irregularities of the pupil.

BIBLIOGRAPHY.

Fuchs: Ophthalmology, Oct., 1913.
Zur Nedden klin. Monatsbl., June, 1914.
Elliot: Ophthalmoscope, Oct., 1914.
Meller: Klin. Monatsbl., Jan., 1914.
Lagrange: Archives d'Ophthalmologie, Feb., 1914.
Quackenbos: Trans. Amer. Ophthal. Soc., 1914.
Fox: Ophthalmology, Jan., 1914.
Stephenson: Ophthalmoscope, May, 1914.
Löhlein: Archiv f. Ophthal., lxxxv.
DeSchweinitz: Internat. Cong. Medicine, xvii.
Darier: La Clinique Opthal., Jan., 1914.
Koster: Internat. Congr. Med., xvii.
Mattice: Knapo's Archives, May, 1914.
Uhthoff: Report Ophthal. Soc., Heidelberg, 1913.

* * *

Clinical Department.

PAROTID FISTULA FOLLOWING MASTOID OPERATION.

By Philip Hammond, M.D., Boston.

Although it is well known that the mastoid operation is beset with difficulties, and that in performing it numerous structures may be injured, it would appear that the parotid gland is not subject to such injury. One does not think of it as lying in the course of the incision, and the writer has not been able to find any reference to it as one of the dangers to be avoided. While apparently unknown as a sequel to the mastoid operation, fistulae of the parotid gland are occasionally encountered by the general surgeon, and are considered to be extremely difficult to heal. The existence of such a fistula may be of exceeding annoyance to its possessor,[1] particularly in the case of a woman. The constant discharge of saliva renders one objectionable to his fellowmen, and the great increase during mastication necessitates satisfying hunger in solitude. The amount of fluid excreted may assume considerable proportions. Duphenix collected from a salivary fistula seventy grams of fluid in fifteen minutes, and a patient of Jobert's discharged several cupfuls in twenty-four hours. Attempts to close the fistula by cauterizing are recommended by some authorities before resorting to surgical intervention. The latter does not invariably cure, as it is extremely difficult to obtain a wound free from infection. Several successfully-operated cases are reported by Armstrong.[2]

The following case was brought to the attention of the writer at the Massachusetts Charitable Eye and Ear Infirmary, on July 7, 1913:

M. G., female, 9 years old. Five years before had had mastoid operation on right ear. Both ear and mastoid had healed in due course. The mother stated that during the past five years there had been a persistent discharge of watery fluid from the right cheek.

Examination revealed that the drum was healed. There was a depressed scar over the right mastoid extending nearly to the angle of the jaw. At the extreme lower end of this incision was a fistula so small as to be practically invisible. It was noticeable only as one saw fluid exude from it. The discharge was slight but constant, and was markedly increased while eating, or while chewing gum. The patient was kept under observation more than a week while exhaustive tests were made to establish beyond a doubt the fact that it was really a parotid fistula. On several occasions, potassium iodide ingested plain, and in capsule gave the starch reaction from the discharge within twenty minutes.

On July 22, 1913, under ether a piece of horse-hair was inserted into the fistula as far as it would go, about one-fourth of an inch. Using this as a guide, the tract was extirpated *en masse,* uncovering gland tissue. The incision was closed with three horse-hair sutures. The wound healed by primary union, and the sutures were removed on the fourth day.

The patient remained under observation until July 30, the eighth day following operation, when she was discharged from the hospital cured. I received a note from her parents on Nov. 24, 1914, in response to an inquiry, stating that she had remained well. This case is reported because of its exceeding rarity.

REFERENCES.

[1] System of Surgery, Choice, Vol. 2, p. 236.
[2] Am. Practice of Surgery, Vol. vi, p. 298.

Book Reviews.

Essentials of Physiology. By F. A. BAINBRIDGE, M.A., M.D. (Cantab.), D.Sc. (Lond.), F.R.C.P., and J. ACWORTH MENZIES, M.D. (Edin.) With 134 illustrations. London: Longmans, Green and Company. 1914.

This excellent small text-book aims to compile in concise form the fundamental facts and principles of physiology for medical students. So far as possible, histologic details, descriptions of chemical and experimental methods, and matters of purely historic interest have been omitted. The Basle nomenclature is introduced throughout in brackets. Most text-books of physiology are so overburdened with details of the sort here omitted, as to be not only wearisome, but sometimes quite unreadable. The authors of this volume have shown their wisdom as well as their scientific knowledge and literary skill, by producing a convenient text-book in physiology which is actually attractive and interesting to read.

Cunningham's Manual of Practical Anatomy. Revised and edited by ARTHUR ROBINSON, Professor of Anatomy in the University of Edinburgh. Sixth edition. New York: William Wood and Company. 1914.

This sixth and latest edition of Cunningham's dissecting manual is welcome to students and teachers of anatomy. The text has been wholly revised, some of the figures altered, several new figures added, and a series of radiographs introduced. The chief alterations are in the section on the brain, which has been rearranged and largely rewritten. The first volume is illustrated with 249 figures in the text and 22 plates, 60 of which are in colors, and the second volume with 267 illustrations in the text and 11 plates. The Basle nomenclature is used throughout. The work thus adds to its former distinguished merits others which still further increase its already established standard of excellence and reliability.

Infant Feeding and Infant Metabolism. A Foundation for the Practitioner. By LEO LANGSTEIN and LUDWIG F. MEYER, Berlin. With 46 illustrations in the text. Second and third editions. Revised and enlarged. Wiesbaden: J. F. Bergmann. 1914.

This second and third edition of a standard German text-book on infant feeding has been delayed by the authors to enable the decision of various points in conflict and to permit the digestion and assimilation of the abundant additional material at their disposal. Fundamentally this work represents the pediatric principles upon which American methods of infant feeding are based, yet it is so cumbered with theoretic and laboratory details as hardly to be of available value to English-speaking practitioners.

Animal Experimentation and Medical Progress. By WILLIAM WILLIAMS KEEN, M.D., LL.D., Professor Emeritus of Surgery, Jefferson Medical College, Philadelphia. Boston and New York: Houghton Mifflin Company. 1914.

Mr. Stephen Paget's "For and Against Experiments on Animals" was reviewed in the issue of the JOURNAL for Nov. 14, 1912 (Vol. clxvii, p. 701). Dr. Keen's book is of much the same purpose and type. It consists of a series of fifteen essays, on topics connected with vivisection, which have previously appeared in various publications, one of them, on "The Influence of Antivivisection on Character," in the JOURNAL of May 2 and 9, 1912. There is a characteristic introduction by President Eliot. Like Mr. Paget's, this work "should prove a useful source of authoritative material for future defense of animal experimentation." Dr. Keen's facile literary style makes his book not only valuable but delightfully attractive.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, JANUARY 7, 1915.

Editors.
Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D. } *For the Massachusetts Medical Society.*
Frederick T. Lord, M.D. }

Committee of Consulting Editors.
Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.
Edward C. Streeter, M.D., Boston, *Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

ANNOUNCEMENT.

The announcement attached to the front cover-page of this issue calls attention to various changes in the administrative and editorial organization of the Journal.

The appointment of a committee of consulting editors, it is believed, will result in an increased value of the editorial pages to the profession. From week to week members of this committee will contribute editorials commenting upon or interpreting important technical original articles appearing in the columns of the Journal. They will also consult upon all matters of policy, so that the editorial conduct of the Journal will represent, not the opinion of a few, but the collective judgment of a number of experts.

From its continuing affiliation with the Massachusetts Medical Society, the Journal, as official organ of that association, will publish its proceedings, notices, news, and from time to time such editorial communications as the president or other officers of the society may wish to make to the profession.

An arrangement is also in process of development, whereby preliminary communications, and reports of clinical and laboratory research work done at the Harvard Medical School and allied hospitals will appear in these columns.

Editorially the Journal will continue its policy of non-partisan comment on medical legislation and other current events of medical importance, seeking fairly to represent all sides of every question, avoiding personal controversy, aiming judicially to reach wise decisions, to encourage tolerant discussion, and impartially to guide professional opinion. The new editor-in-chief assumes his duties with most grateful and appreciative respect to his predecessors in office; with reverence for the honorable traditions of the past, with consciousness of his responsibilities in the present, with hope that in future the Journal, changing and adapting itself to the needs of new occasions, yet retaining its intrinsic and original character, may without interruption continue worthily to represent and serve the medical profession at home and abroad.

◆

THE TESTS FOR MEMBERSHIP IN THE MASSACHUSETTS MEDICAL SOCIETY.

It is provided in the Acts of the Commonwealth that "no person shall become a member of the Massachusetts Medical Society except upon an examination by the censors of said society." It is further provided in the by-laws that the censors of each District Society shall meet at least twice a year for the examination of applicants, and that applicants shall not be considered as possessing the requisite qualifications for fellowship unless approved by at least three (of the five) censors. General uniformity of plan of examination in the several districts is secured by a Board of Supervising Censors, one being named by each district, who meet annually for the purpose of preparing the papers.

Most Fellows have joined the society shortly after completing their medical curriculum and at a time when they are probably best fitted to stand a written test in all of the ten or more subjects in which the censors usually examine. This examination is one of three, which for most men come in rather close succession, and which are all somewhat similar in scope,—the other two being the test set by the medical school for the degree, and that given by the State Board of Registration for the legal right to practise. The last of these three is the only one which is absolutely indispensable for medical practitioners in Massachusetts, where, unfortunately, by law the Board of Registration may not require the possession of a diploma as evidence that the candidate has received a proper medical or premedical education.

Membership in the State Society, however, carries with it so many advantages, educational, legal, ethical and social, that all qualified practitioners should seek it. What shall be done in the case of physicians who by reason of removal into the state after some years of practise elsewhere, or from neglect to make more timely application, find themselves in mid-life, while legally qualified practitioners, outside the pale of the society? Shall such persons necessarily be subjected to exactly the same kind of examination as the young men just out of the school? Fortunately these questions have been answered in the negative by many boards of censors in the past, thereby securing to the society many brilliant men, professors in our medical schools, public health officials and the like, who, after years spent in the pursuit of some branch of special medical study, would have forgotten so much of their unused mental equipment as to be unable to pass a written examination in all branches and who would frankly refuse to try to do so.

In the less conspicuous ranks of the profession there are a good many men who have been doing creditable, honest work in some branch of medicine, acceptable to their patients and approved by their professional neighbors. The censors have agreed that one-half the total value of the examination shall be given to written and one-half to oral tests. In the former category alternative questions might be proposed to these candidates. Every live doctor, after ten years of practice, may know less about some branches than he did on graduating, but should know much more about others. Give him a chance to select the subjects he will write about. And in the "oral" part of the test let the evidence both from himself and his medical neighbors count largely as to his fitness for membership. Men who have worked in the same town or on the same street with him should be able to give a pretty good idea of what manner of man he is. The Board of Censors is responsible eventually for his acceptance or rejection, but the collection of evidence about his work and character, while it may involve more labor than a formal written test, may yet be the most useful part of the "examination." Moreover, while the law provides that the censors shall "examine," it leaves to their discretion what kind of examination in special cases is best adapted to learn the candidate's fitness.

It should be borne in mind that in many of the neighboring states the sole criteria for membership in the county and state societies are, (1) graduation from a good medical school, and (2) the passage of the state board examination, being two out of the three tests which, as above remarked, most of the qualified practitioners in Massachusetts must pass. Some of the censors are of the opinion that this would be an adequate requirement here. In that case the duty of the censors to "examine" would resolve itself into the verification of these two sorts of credentials and the investigation of the moral character of the candidate.

While the present system remains, however, it can be rendered more elastic, without any lowering of the intellectual or moral standard hitherto required, by simply recognizing in some cases the propriety of changing the methods of finding out the facts. The element of character should weigh heavily. In ten years of practise the character of a man has become pretty well fixed and can be generally better known than that of the neophyte who has been admitted to membership before he has had time to do much, good or bad. Only let us remember that if a person is to be admitted to the society in any degree upon his record, that record should be without a flaw. The advertiser, the fee-splitter, the abortionist, the pretender, should find the gate closed, the wall unscalable.

CHARLES F. WITHINGTON, M.D.,
President.

PTOSIS IN CHILDREN.

AN article on "Ptosis" by Dr. J. T. Williams, appearing in this issue of the JOURNAL, is a valuable review of the general subject and of methods of treatment.

It must be acknowledged that ingenious and skilful as have been the surgical attempts radically to correct the condition in adults, the results have not been as important or as uniform as could be desired. Other methods, medical, postural, mechanical, are purely palliative; and if surgery fails we are forced to admit that well-marked cases will probably remain well-marked cases to the end of their days, to be relieved, perchance, of some of their discomforts, but not cured of the underlying condition. We speak now of the congenital visceral ptosis not of the acquired. The latter type while sometimes productive of quite as serious symptoms is more capable of cure.

Quite apart from the question as to whether congenital visceral ptosis is productive of symptoms in the child, its surprisingly common occurrence is a matter proved beyond cavil. It may be recognized not only by Roentgenological examination, but also by the general physical characteristics of the child. What shall we do about it? We may leave it alone and wait for growth and the upright position to increase the abnormality. On the other hand, after the child has assumed the upright position and an actual ptosis or a tendency to it is evident, we may strive by means of the development of muscles, by proper posture, and if necessary by means of mechanical supports to maintain a normal position of the viscera which growth will make permanent.

Though the symptom-complex of the condition frequently is associated with digestive upsets and malnutrition in children, it is in later life that we may expect fairly constant lack of physical endurance, the common "dyspepsias," and the occasional mental aberrations. We must admit the seriousness of the condition in the adult and the uncertainty of relief. If we can be persuaded of the possibility of cure in the child, surely this becomes a matter of preventive medicine whose importance can be measured only in terms of succeeding generations.

* * *

PROPOSED TRANSFER OF BOSTON QUARANTINE SERVICE.

In last week's issue of the Journal we commented editorially on the proposed transfer of the Boston Quarantine Service from municipal to federal control. This transfer was approved by the Boston Association for the Relief and Control of Tuberculosis. A special hearing on the subject was held on Friday, January 1, before the committee on ordinances of the Boston City Council. In a communication addressed to this committee on December 28 the Boston Finance Commission makes the following statements and expresses the following opinion, which, as evidence of the expert judgment of this body, seems of value in determining the attitude of others on this question.

"On April 21, 1914, the Finance Commission recommended to the executive committee of the City Council that the quarantine service of the Port of Boston be transferred to the United States Government.

"The Commission said in that report, 'The service (quarantine) of Boston is almost, if not quite, as important to adjacent cities and towns, to the state and to adjoining states, if not to the entire country, as it is to the port of Boston. Recent acts of Congress have recognized the fact that quarantine service is a matter of national concern. The Act of Congress of Feb. 15, 1893, provides that "whenever the proper authorities of a state shall surrender to the United States the use of the buildings and disinfecting apparatus at a state quarantine station, the Secretary of the Treasury shall be authorized to receive them and to pay a reasonable compensation to the state for their use if, in his opinion, they are necessary to the United States."' Under this provision various cities and states have transferred their quarantine functions to the general government. The only cities of any importance which have not done so are New York, Boston and Baltimore.

"While Baltimore maintains its own quarantine service, the federal government also has a station, located at Cape Charles, and thus has direct control over all quarantine cases before the vessels reach Baltimore. The only cities, therefore, that have no federal supervision over quarantine cases are New York and Boston, and inasmuch as the commission understands that arrangements are about to be perfected for the transfer of the city of New York quarantine service to the Washington Government, Boston will be the only city in the country that is not under federal control.

"Under the federal statutes property belonging to the local service, when transferred to the United States, is paid for by the latter, and if a special appropriation of Congress is necessary before purchase a rental is paid until such appropriation is made. Under these provisions the quarantine station at Boston, including the boats and other property, may be sold to the United States, and the competent men now engaged in the local service may, under proper observance of civil service rules, be transferred to the public health and marine hospital service. The transfer would make for uniformity and efficiency in quarantine work; would free the commerce of Boston from the payment of quarantine charges, and would relieve the city of a large expense.

"It is the opinion of the best medical authorities that the war conditions existing in Europe will result in the spread of contagious diseases to the United States. Such a condition in the near future further emphasizes the recommendation made by the Finance Commission.

"The present quarantine service of Boston is inadequate to cope with the contagious diseases which will soon reach the port of Boston, and there must be a large and immediate expenditure of money to equip the present quarantine service to meet this emergency.

"The personnel of the staff is competent, but the service of the federal government would be better, because of the fact that the latter would be enabled to work in unity with the quarantine service of the whole country.

"The Finance Commission repeats its opinion as contained in its report of April 21, 1914, and recommends that both the present ordinance abolishing the quarantine service of the Board of Health, and the order providing for the transfer of the quarantine property to the United States Government, now pending before your honorable committee, be reported favorably."

The executive committees of the Norfolk and Suffolk Districts of the Massachusetts Medical Society, and of the Boston Homeopathic Medical Society, representing a membership of about 1400 physicians, have also unanimously endorsed the proposed quarantine transfer.

◆

AMERICAN COLLEGE OF SURGEONS.

THE third convocation of the American College of Surgeons was held in Washington, D. C., on November 16, 1914, with the President, Dr. J. M. T. Finney in the chair. In his introductory remarks Dr. Finney stated that the subscriptions to the proposed endowment fund of $1,000,000 already amount approximately to $250,000. The Secretary, Dr. Franklin H. Martin, in presenting the roll of candidates, conveyed to the Fellows the greeting of Sir Rickman Godlee, president of the Royal College of Surgeons of England, with the gift from him of a gavel designed and used by Lord Lister. The list of new Fellows numbered 646. The honorary Fellows were Dr. Dudley P. Allen of Cleveland, Ohio; Dr. William C. Gorgas, U. S. A., of Washington, D. C.; Dr. Lewis S. Pilcher of Brooklyn, N. Y.; Sir Thomas George Ruddick of Montreal; and Dr. J. William White of Philadelphia.

The fellowship address was delivered by Dr. Edward H. Bradford of Boston, Dean of the Harvard Medical School. Speaking on "The Higher Education in Surgery" Dr. Bradford expressed the opinion that the American College of Surgeons should become an important agency in the advancement of American surgery through its influence on the better education and training of surgeons.

After concluding remarks by Dr. Finney, the meeting adjourned to an informal reception. At the first annual meeting of the college held on the afternoon of the same day, a number of committees were appointed and the report of the committee on examination for membership was received. This report is printed at length in another column of this issue of the JOURNAL. There were addresses by the secretary, by Dr. Finney, Dr. John B. Murphy of Chicago, Dr. F. D. Gray of Jersey City, N. J., Dr. John W. Long of Greensboro, N. C., and Dr. G. Sterling Ryerson of Toronto.

The following officers were elected for the ensuing year:

President—Dr. J. M. T. Finney.
First Vice-president—Dr. W. W. Chipman.
Second Vice-president—Dr. Rudolph Matas.
General Secretary—Dr. Franklin H. Martin.
Treasurer—Dr. A. J. Ochsner.

◆

LEGISLATION ON CARE OF TUBERCULOSIS IN MAINE.

AT the opening of the Legislature of the state of Maine, on January 6, a bill was presented before that body providing for the establishment of a sanatorium for the treatment of persons infected with tuberculosis who are unable to pay for their care. There are already several state institutions for the tuberculous in Maine, but none where poor patients can go without charge.

In their estimates for the years 1915 and 1916, which were filed at the office of the state auditor in Augusta, Me., on December 26, the directors of the Maine Association for the Relief and Control of Tuberculosis advocated the establishment of an institution for advanced cases and also of a commission to study and direct the work of tuberculosis prevention.

The proposed act referred to above, aims to carry out these recommendations. It provides for an institution to be known as the Maine State Sanatorium for Tuberculous Patients and to have a government vested in a board of hospital trustees.

"The proposed act also provides that all persons who are proper subjects for this sanatorium, who are unable to pay the fixed charges of the institution, upon recommendation of the municipal officers of the city or town of which the patient is a resident, may be admitted free of charge. All other persons who are proper subjects shall pay $4.50 per week.

"Under the bill, the board of hospital trustees shall select and purchase a suitable site for the sanatorium and shall proceed as soon as practicable to erect and furnish and equip suitable buildings. The bill carries $100,000 to be used within the next two years.

"As an alternative for the state to appropriate $35,000 for the year 1915 and $55,000 for the year 1916 for the sanatorium at Fairfield, the directors suggest that the state take over this institution, which has cost the Association about $25,000, the state to pay approximately $15,000 or a sum equal to the estimated indebtedness at the beginning of the year 1915 and that the institution at Fairfield be one of several of the kind which should be supported and managed by the state."

In the conclusion of their report the directors of the Maine Association for the Relief and Control of Tuberculosis speak as follows of the tuberculosis situation in that state:

"The fact that approximately 10 per cent. of the deaths in the state are from tuberculosis entitles this work and the suppression of this plague to an immediate and earnest consideration.

"The five years' experience of the members of this association has convinced us that the needs of the state in handling the tuberculosis situation are infinitely beyond the ability of private institutions or individuals to handle.

"The number of patients at the Fairfield Sanatorium is thirty. The present average cost of a patient is about $15 per week. With added equipment to care for sixty patients, and funds with which to take advantage of cash discounts and other economies, the cost could probably be reduced to $10 or $12 per week, which is the average cost in some of the large institutions in Massachusetts.

"Many applications have to be refused because patients pay but $2 or $3 per week, and a large number are refused because they can pay nothing. Many other applicants are refused because they are in an advanced stage of the disease and cannot be well treated in the same building with early cases."

◆

MEDICAL NOTES.

London Death-Rates in November, 1914.—Statistics recently published show that the total death-rate of London in November, 1914, was only 14.6 per 1000 inhabitants living. Among the several districts and boroughs the highest rate was 20 in Finsbury, a populous central slum, and the lowest was 10.4 in Lewisham, an open southern section of the city.

Appointment of Dr. Moynihan.— It is announced that Dr. Sir Berkeley Moynihan, of Leeds, England, has been appointed consulting surgeon with the British forces overseas, and left London for France on Dec. 4 to assume his duties.

American University Registration Statistics.—The registration statistics of thirty American universities for 1914, published in the issue of *Science* for Dec. 25, show that, including summer-session enrolment, the first eight are Columbia, California, Chicago, Wisconsin, Pennsylvania, Harvard, Michigan, and New York. Exclusive of summer students, the order is Columbia, Pennsylvania, California, Michigan, New York and Harvard. The largest medical school is that of New York, with 439 students. The Michigan medical school has 378, Johns Hopkins 374, Columbia 378, Tulane 343, Harvard 321, Pennsylvania 290, Illinois 287, and Ohio 281.

Sanitary Progress in New York.—Report from Albany, N. Y., states that on Dec. 25 the governing board of the state board of health issued an order forbidding the use of common drinking-cups and roller-towels in public places, and fixing sanitary rules to govern barber shops, manicure parlors, and chiropodist offices. This order is essentially the same as those already adopted in several other states and enforced on interstate railroad trains.

Medical Students in Switzerland.—In the summer of 1914 the total number of medical students in the Swiss universities was 2205, of whom 327 were at Bâle, 117 at Berne, 879 at Geneva, 316 at Lausanne, and 566 at Zürich.

Oregon Eugenic Marriage Law.—An item in the Philadelphia *Bulletin* notes that a recent convention of county officials in Oregon voted its unanimous disapproval of the present so-called eugenic marriage law in that state, requiring a physical examination of all male applicants for matrimonial licenses. Its repeal is advocated on the ground that it has proved ineffective and even harmful.

The Epizoötic of Foot and Mouth Disease.—On Dec. 23 the federal quarantine for foot and mouth disease among cattle was raised from the following counties of Illinois: Alexander, Bond, Calhoun, Crawford, Clay, Clinton, Edwards, Effingham, Fayette, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jasper, Jefferson, Jersey, Johnson, Lawrence, Macoupin, Madison, Marion, Massac, Montgomery, Monroe, Perry, Pope, Pulaski, Randolph, Richland, St. Clair, Saline, Union, Wabash, Washington, Wayne, White and Williamson.

In the following counties, upon which the quarantine is modified, cattle may be received and shipped for immediate slaughter: Brown, Clarke, Christian, Cumberland, Greene, Pike, Shelby and Scott.

An absolute quarantine was ordered against Tucsola county, Mich., and Tioga county, N. Y.

In Connecticut the quarantine has been modified over all the state, except the counties of New Haven and Hartford, to permit the cattle to enter for any purpose and to be shipped out for immediate slaughter.

Poliomyelitis in Vermont.—The weekly report of the United States Public Health Service for Dec. 18 states that during October, 1914, there were 55 cases, and during November, 9 cases of poliomyelitis in Vermont.

Cholera in Silesia.—During the fortnight from Nov. 15 to 28 inclusive, 1914, 33 cases and 9 deaths of Asiatic cholera were reported among troops of the Austrian army in Silesia, Germany.

Tuberculosis Campaign Costs Twenty Millions.—The annual statistical statement of the National Association for the Study and Prevention of Tuberculosis, issued on Jan. 2, shows that over $20,500,000 were spent last year in the campaign against tuberculosis in the United States. Of this sum, 66.8 per cent. was derived from public funds, either federal, state, county or municipal, and the remainder was contributed by private philanthropy.

Institutional care and treatment of consumptives in hospitals and sanatoria makes up the largest share of the total expenditures. More than $17,300,000 were spent for this purpose, with an additional $925,000 for special treatment of tuberculous insane and prisoners. These figures include not only the cost of maintenance, but in some instances the cost of construction of institutions. Anti-tuberculosis associations spent the next largest sum, amounting to a little over $900,000. Care of patients in dispensaries and by visiting nurses cost almost as much, approximately $860,000. The growth of the open air school movement is shown in the fact that last year more than $300,000 were spent for this purpose, as against $10,000 expended five years ago. State and city boards of health spent $200,000 directly on tuberculosis work.

In the last five years, the percentage of money spent from public funds has steadily increased from 53 per cent. in 1909 to 69.3 per cent. in 1913, and 66.8 per cent. last year. The National Association considers this increase significant, since it indicates a shifting of the burden of institutional care of the consumptive from the private purse to the general public purse where it rightly belongs.

New York spent more money last year in the tuberculosis campaign than any other two states in the Union, due largely to the increased and rapidly-developing movement for city and county care of the tuberculous. Pennsylvania, which has occupied second place for the past four years, was superseded last year by Illinois, with Massachusetts in fourth place and Colorado in fifth place.

European War Notes.—In a recent letter to the public daily press, Mr. Robert Bacon has called renewed attention to the needs of the American Ambulance Hospital at Paris:

"The American Ambulance Hospital in Paris has cabled an urgent appeal for more volunteers to drive motor ambulances in France; 180 men and 100 ambulances are wanted as soon as possible.

"A word of explanation of what the American hospital is: Its present organization consists of the main hospital at Neuilly, on the outskirts of Paris, located in the Lycée Pasteur building, which had just been completed at the outbreak of the war. It is at present equipped with about 450 beds. A second hospital unit has also been established at a point nearer the firing line, about 20 miles from Paris. This contains about 200 beds.

"In addition there is a flying ambulance corps, consisting of about 60 motor ambulances.

"To enlarge this work and increase its effectiveness a call for volunteers is now made. The reports from the surgeons working in the hospital show that the majority of the cases brought to them have been so delayed in reaching medical assistance that gangrene and blood poisoning have frequently unnecessarily set in, and that some of those only slightly wounded have succumbed because of inattention before reaching the hospital.

"To date each ambulance has averaged the transportation of over 50 wounded a day, and there are many emergency calls when they are pushed to the fullest extent of their endurance. It is not especially easy work, and every volunteer is subject to the military discipline of the organization."

Report from Philadelphia on Dec. 28 states that Dr. J. William White, a trustee of the University of Pennsylvania, has announced that the university is preparing to send to Paris eight or ten surgeons to take charge of a ward of the American Ambulance Hospital, endowed by Philadelphia citizens.

Report from Cleveland, Ohio, on Dec. 28 announced plans for an expedition to be sent to the American Ambulance Hospital, Paris, by the Western Reserve Medical School and Lakeside Hospital, and on Dec. 30 this expedition sailed for Europe. The expedition is to be financed by trustees and other friends of the two institutions. Its personnel will consist of Dr. George W. Crile, professor of surgery, Western Reserve University, and visiting surgeon of Lakeside Hospital; Dr. Samuel L. Ledbetter, Dr. Edward F. Kieger and Dr. Le Roy B. Sherry, now of the resident staff of Lakeside Hospital, who will act as assistant surgeons and clinical assistants; Dr. Lyman F. Huffman of the resident staff of Lakeside Hospital, who will act as clinical pathologist; Dr. Charles W. Stone, assistant professor of nervous diseases in Western Reserve University, and visiting neurologist of Lakeside Hospital; Miss Agatha Hodgins and Miss Mabel L. Littleton, anesthetists; Miss Iva B. Davidson and Miss Ruth J. Roberts, from the operating-room staff of Lakeside Hospital.

Dr. Crile takes with him also, to assist in a special research, Miss Amy F. Rowland, B.S., Mt. Holyoke College, and William J. Crozier, Ph.D., Edward Austin Fellow of the department of zoölogy of Harvard University.

On Jan. 1 the total of the New York Belgian relief fund amounted to $697,416.17; the New York Red Cross fund to $415,019.83; the German relief fund to $323,050.00; and the American Jewish relief fund to $237,881.93.

The New England Belgian relief fund amounted to $164,086.89; the Massachusetts Red Cross fund to $94,416.22; the Boston branch of the American Ambulance Hospital fund to $48,793.95; the Boston Jewish relief fund to $23,647.85; the Russian relief fund to $9570.00; and the Polish relief fund to $9052.91.

BOSTON AND NEW ENGLAND.

Smallpox in Everett.—Report from Everett, Mass., states that two cases of smallpox were discovered in that town on Dec. 27. The couple have been isolated in their home, and about 350 contacts were vaccinated.

Fire in New Haven Hospital.—Report from New Haven, Conn., states that on Dec. 27 a fire broke out in the Grace Hospital of that city. The seven patients in the portion of the building involved were rescued by nurses. The damage is estimated at $10,000.

New England Baptist Hospital Training School.—The trustees of the New England Baptist Hospital have issued invitations to the graduation exercises of their training school for nurses to be held on Thursday evening, Jan. 7, 1915, at 8 o'clock, in Kingsley Hall, Ford Building, corner of Bowdoin Street and Ashburton Place, Boston. The principal address will be made by Dr. Joel E. Goldthwait, of Boston, and diplomas will be presented to a class of nine nurses by Colonel Edward H. Haskell, president of the board of trustees. Dr. George S. C. Badger, chairman of the training school committee, will preside.

Hospital Bequests.—At the recent 35th annual meeting of the Lynn (Mass.) Hospital, announcement was made of a gift of $100,000 for a nurses' home from Mrs. Luther S. Johnson, of that city.

The will of the late Sara E. Woodworth, of Boston, filed in the Suffolk probate court on Dec. 26, contains a bequest of $6000 to the Free Hospital for Women, Brookline, Mass.

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending Dec. 29, 1914: Diphtheria 66, of which 1 was non-resident; scarlatina 40, of which 6 were non-resident; typhoid fever 4; measles 50; tuberculosis 43, of which 4 were non resident. The death-rate of the reported deaths for the week was 16.95.

Current Literature

Medical Record.

December 19, 1914.

1. Fauntleroy, P. C. *Gun-shot and Shell Wounds.*
2. Mabbott, J. M. *Infant Feeding with Top Milk.*
3. Rankin, E. G. *The Readings of the Sphygmomanometer from a Clinical Standpoint.*
4. Brodsky, E. S. *Delirium Grave with Report of Three Cases and Differential Diagnosis.*
5. Dana, C. L., and Elsberg, C. A. *Cyst of the Cerebello-Pontine Angle; Operation with Relief of Symptoms.*
6. *Lumbard, J. E. *A New Method for the Control of Post-Anesthetic Nausea.*
7. Pabst, C. F. *Why Fumigation Fails.*

6. Lumbard holds that the chief factor in the causation of nausea and vomiting after ether or other anesthetics is the smell of the anesthetic. He has devised a cigarette-shaped piece of gauze which can be fastened to the face by adhesive plaster in such a way that it just projects beyond the tip of the nose. By keeping this gauze saturated during an operation with some pleasant perfume, *e.g.* oil of bitter orange peel, he has been uniformly successful in preventing post-anesthetic nausea. [L. D. C.]

New York Medical Journal.

December 19, 1914.

1. Evarts, A. B. *Report of a Case of Aphasia and Apraxia.*
2. Lerch, O. *Glenard's Disease.*
3. Robinson, W. J. *Gonorrheal Epididymitis and Its Non operative Treatment.*
4. Fox, H. *Cirrhosis of the Liver in Wild Animals.*
5. Frank, J. *Penetrating Gunshot Wounds of the Abdomen.*
6. Fauz, J. I. *Phenolsulphonephthalein Renal Function Test.*
7. Abrhams, R. *Autoserum Injections in Streptococcic Endocarditis.*
8. Bates, F. D. W. *Eye-strain in the Development of Tuberculosis.*
9. Skilern, P. G., Jr. *Sulphurous Acid in the Treatment of Furuncles.*
10. Sonnenschein, H. D. *The Treatment of Chronic Leg Ulcers.*

The American Journal of the Medical Sciences.

September, 1914.

1. *Schmidt, A. *Severe Anemia Connected with Gastro-intestinal Diseases.*
2. Anders, J. M., and Jameson, L. H. *The Relation of Glycosuria to Pituitary Disease and the Report of a Case with Statistics.*
3. *Fitz, R. *The Value of Tests for Renal Function in Early and Advanced Bright's Disease.*
4. *Schleiter, H. G. *Observations on the Intravenous Use of Strophanthin with Regular and Irregular Pulse Rhythms.*
5. *Goodman, E. H., and Luders, C. W. *The Value of Colonic Inflation in the Diagnosis of Chronic Appendicitis.*
6. Morgan, W. G. *Duodenal Alimentations.*
7. *Stoll, H. F., and Heublein, A. C. *Tuberculosis of the Bronchial Glands and Lung Hilus: A Clinical and Radiographic Study.*
8. Williams, E. M. *Hereditary Ataxia*
9. *Hopkins, J. G., and Zimmermann, J. B. *Cholesterin Antigens in the Wassermann Reaction and the Quantitative Testing of Syphilitic Sera.*
10. Campbell, R. P., and Ower, J. J. *An Unattached Mass Found in the Abdominal Cavity of a Male.*
11. Emsheimer, H. W. *The Value of Petechiae in Diagnosis and Prognosis.*
12. Briggs, LeR. H. *The Neutrophilic Blood Picture in Pernicious Anemia: A Preliminary Report.*

1. Schmidt contributes a careful discussion of the evidence as to the etiology of pernicious anemia, with special reference to that suggesting that a hemolytic agent derived from the gastro-intestinal tract is responsible, at least in some of the cases. It is shown that the gastric achylia in certain instances has been proved to exist before the appearance of the anemia, and that the diarrhea present in a third of a series of cases preceded the development of the anemia by many years. While no constant anatomical changes are demonstrated, the author supports the view that degenerative changes in the mucous membrane of the small intestine produce hemolytic lipoids, which have been extracted by Berger and Tsuchiya in his laboratory. In treatment he advises a diet avoiding irritants, finely divided and easily assimilable, limiting carbohydrates or proteins according as the stools are acid and fermenting or alkaline and putrefactive. Stress is laid upon the regular use of hydrochloric acid with meals and upon gastric and duodenal lavage.

3. Fitz's paper deals first with Schlayer's tests of renal function, by which, as in illustrative cases, it is shown that delayed excretion of lactose, injected intravenously or intramuscularly, is indicative of vascular nephritis, whereas delayed outputs of sodium chloride and of potassium iodide point to tubular nephritis. These tests have been shown to reveal abnormal conditions in advance of clinical symptoms which have later developed. Of wider application in determining the severity of the disorder in cases with symptoms, however, is the phenolsulphonephthalein test, by means of which with few exceptions information may be obtained as to the total renal function. To minimize the occurrence of error in these exceptions more than one test must be used. The determination of the incoagulable nitrogen and urea in the blood is of importance. Determinations of signs of acidosis in blood, urine and expired air may prove of significance. By the results of these tests the dietetic treatment may be made more rational, giving a salt-poor diet in cases with poor chloride elimination, limiting protein in cases unable to excrete nitrogen, and giving alkalies in cases with acidosis.

4. Schleiter reports upon a series of cases given intravenous doses of strophanthin, some being cases with regular hearts, while others were cases of auricular fibrillation or other irregularities. While the tracings given are not all conclusive of the diagnoses, and little attention was paid to the effect on blood-pressure, the observations are of distinct interest. It is concluded that the action of strophanthin administered intravenously is similar to that of other members of the digitalis group administered orally, but more rapid. It showed a decisive effect in all cases of auricular fibrillation, and is recommended in severe cases of this condition to tide the patient over until digitalis by mouth takes effect. In the series with regular hearts its action was not striking. The maximum dose is 1 mgm. In two cases of paroxysmal tachycardia its use was followed by cessation of the attack.

5. Goodman and Lüders have applied Bastedo's test of colonic inflation to induce tenderness at McBurney's point, proposed as a sign of chronic appendicitis. While they failed to obtain a positive test in any of 75 control cases, in three with abdominal symptoms who reacted positively, no appendicular lesion was found. Twelve of the negative cases had diseased appendices, five having acute appendicitis. They conclude that the test is not without value, but that it should be regarded as merely an aid to diagnosis to be given only minor consideration.

7. Stoll and Heublein discuss the occurrence and diagnosis of tuberculous bronchial glands, particularly in children. They conclude that up to the fifteenth year this is the commonest form of tuberculosis. The early symptoms are chiefly toxic, although cough is generally present. Signs of apical disease are not to be expected. The most significant sign in their opinion is whispered bronchophony over thoracic vertebrae as described by d'Espine.

9. Hopkins and Zimmermann have done a large number of Wassermann reactions comparing the lipoid and the cholesterin antigens. The results seem to show that the cholesterin antigens, while increasing the sensitiveness of the test, involve a risk of error which should not allow them to be used to the exclusion of the less sensitive extracts of the original test.

[F. W. P.]

October, 1914.

1. *Miller, J. L. *The Clinical Value of Expectorants.*
2. *Hall, J. N. *Relative Pulmonic Insufficiency.*
3. *Taussig, F. J. *The Prevention and Treatment of Vulvovaginitis in Children.*
4. *Einhorn, H. *Direct Examination of the Duodenal Contents (Also Bile) as an Aid in the Diagnosis of Gall-bladder and Pancreatic Affections.*
5. Collins, J., and Baehr, E. *Disseminated Sclerosis*
6. Fetterolf, G., and Arnett, J. H. *A Case of Sprengel's Deformity.*
7. Niles, G. M. *Some Remarks on the Treatment of Amebic Dysentery.*
8. Landis, H. R. M., and Kaufmann, I. *The Diagnosis of Tuberculosis in Early Life.*
9. *Friedman, G. A. *The Difference in the Morphology of Blood in Gastric Ulcer, Duodenal Ulcer and in Chronic Appendicitis, Based Upon Fifty Operatively Demonstrated Cases.*
10. Orbison, T. J. *Myopathy: With Clinical Records of Eight Cases Comprising Various Types.*
11. *Howell, A. A. *The Use of Pituitary Extract in the Control of Some of the Associated Symptoms of Pneumonia Which Favor Hypotension.*
12. Williams, T. A. *The Traumatic Neuroses.*
13. Wohl, M. G. *Granuloma Fungoides.*

1. Miller has conducted experiments with the object of testing the influence of expectorant drugs upon the bronchial secretion in dogs. While his results are not convincing as to the action of the drugs in man, he concludes that ammonium carbonate, ammonium chloride, apomorphine and ipecac when given in sufficiently large doses to animals increase bronchial se-

cretion, but that in doses equivalent to ordinary human therapeutic doses no increase occurred.

2. Hall calls attention to the occurrence of relative pulmonic insufficiency, especially in advanced cases of mitral stenosis, a condition which has been seldom mentioned in the literature. He believes it to be found in perhaps 3 to 5% of the cases of mitral stenosis. It is to be detected by the presence of a soft diastolic murmur in the pulmonic area, disappearing as compensation is regained but reappearing as decompensation reappears; with exertion or with expiration, particularly with the glottis closed, it is intensified. The pulmonic second sound is commonly enfeebled.

3. Taussig has investigated 66 cases of vulvovaginitis in children. In the etiology he finds reason to suspect that infection from the lavatory seat is an important factor. In treatment he had the best success with, in acute cases, rest in bed for two weeks with injections of 25% argyrol twice a day; in the second and third weeks the argyrol was replaced by 1% silver nitrate, later changed to 2%, or even 4%, at increasing intervals, until there is no discharge for a month. He urges the adoption of public health measures to diminish the spread of the disease from one child to others.

4. Einhorn reports deductions from his experience with duodenal contents withdrawn by tube for examination The macroscopic appearance of bile is of significance, golden yellow clear bile usually indicating a normal gall-bladder, whereas fresh bile that is greenish yellow and somewhat turbid suggests disease of the gall-bladder and gall-stones. Study of ferments permits gauging pancreatic function. Constant absence of one ferment usually indicates chronic pancreatitis. Absence both of bile and of pancreatic juice suggests obstruction at the papilla, whereas absence of bile only shows a higher obstruction.

9. Friedman attempts to show differences of diagnostic value in the blood pictures of gastric ulcer, duodenal ulcer and appendicitis. His results, however, are not sufficiently constant to deserve more than partial reliance in clinical diagnoses.

11. Howell advocates the use of pituitary extract in pneumonia, not only for its direct effect in raising and supporting blood pressure, but also on account of its action in combating tympanites. He feels that the existence of diarrhea should not be taken as a contraindication. [F. W. P.]

NOVEMBER, 1914.

1. *CLARK, J. G. *Ultimate Results Secured from Surgical Intervention in Simple Cases of Cholelithiasis Discovered During Operations for Other Conditions.*
2. FRIEDENWALD, J. *A Clinical Study of One Thousand Cases of Cancer of the Stomach.*
3. *LICHTY, J. A. *Some Clinical Aspects of Gastric Hemorrhage.*
4. GRULEE, C. G. *Laboratory Diagnosis in the Early Stages of Congenital Syphilis.*
5. *SACHS, B., STRAUSS, I., AND KALISKI, D. J. *Modern Methods of Treatment of Syphilis of the Nervous System.*
6. CALLENDER, G. R. *Cardiac Syphilis: Report of a Case.*
7. *VEEDER, B. S. *Duodenal Ulcers in Infancy.*
8. BROOKS, H. *Effects of Heredity in Bovine Tuberculosis.*
9. *CHURCHMAN, J. W. *Notes on the Examination of the Urine for Tubercle Bacilli.*
10. *COCKE, C. H. *Albumin in the Sputum in Tuberculosis: Its Value in Diagnosis and Prognosis.*

1. Clark's article is in the main a protest against the older teaching that in a large proportion of cases gall-stones cause no symptoms. He urges their removal whenever their presence is known.

3. Lichty calls attention to the occurrence of severe hemorrhages in gastric and duodenal ulcer when food by mouth has been withheld. He concludes that in acute ulcer or in acute exacerbations of chronic ulcer, feeding by mouth should not be suddenly discontinued.

5. Sachs, Strauss and Kaliski report upon 120 cases of syphilis of the nervous system treated by them, in part by salvarsan intravenously supplemented by mercury, and in part by intraspinous use of salvarsanized serum. The latter treatment, however, does not seem to them to possess advantages over the intravenous method. With regard to results the authors feel that in tabes dorsalis in most cases the subjective condition of the patient can be greatly improved and the progress of the disease checked. In cerebral and cerebrospinal lues the results of salvarsan treatment combined with mercury were better than were secured by any previous methods. The results in general paresis were less satisfactory.

7. Veeder reports five cases of duodenal ulcer in infants, four with autopsy, and summarizes the literature.

9. Churchman reports two observations of interest: the finding of tubercle bacilli by examination of washings of the bladder in a case of tuberculous ulcer, and the finding of tubercle bacilli in the urine of a case proved by autopsy to be general miliary tuberculosis.

10. Clark, from a small series of cases and from the literature, concludes that the test for albumin in the sputum in tuberculosis deserves a wider application, with reference both to diagnosis and to prognosis. In diagnosis its worth is still unproved and its presence may be misleading; it seems, however, to be positive in all cases of tuberculosis where the sputum is positive, and in general to vary in amount of albumin, according to the degree of the exudative or destructive process. [F. W. P.]

DECEMBER, 1914.

1. *THAYER, W. S., AND SNOWDEN, R. R. *A Comparison of the Results of the Phenolsulphonephthalein Test of Renal Function with the Anatomical Changes Observed in the Kidneys at Necropsy.*
2. *WILSON, L. B., AND McDOWELL, I. E. *A Further Report of the Pathologic Evidence of the Relationship of Gastric Ulcer and Gastric Carcinoma.*
3. *MOFFITT, H. C. *Studies in Pernicious Anemia.*
4. *LYNCH, J. M., AND DRAPER, J. W. *Anastalsis and the Surgical Therapy of the Colon.*
5. *McCRAE, J. *The Subcutaneous Injection of Oxygen as a Therapeutic Measure.*
6. CROHN, B. B. *New Growths Involving the Terminal Bile and Pancreatic Ducts: Their Early Recognition by Means of Duodenal Contents Analyses.*
7. *PALMER, W. W. *The Absorption of Protein and Fat after the Resection of One-Half of the Small Intestine.*
8. HOLDING, A. F. *The Rœntgenologic Method of Differentiating Between Ulcer and Cancer of the Stomach and Duodenum.*
9. WARFIELD, L. M. *Further Observations on Diastolic and Pulse Pressure.*
10. LYON, B. B. V., AND EIMAN, J. *A Centrifuge Method to Produce a Uniform Standard for Wassermann Readings.*

1. Thayer and Snowden report a study of 54 cases in which the phenolsulphonephthalein test of renal function performed a variable period before death has been compared with the condition of the kidneys at autopsy. In cases of severe chronic nephritis a low phthalein output was found in all. In cases of chronic passive congestion from heart disease the phthalein elimination was often considerably reduced, but as a rule rose with the establishment of circulatory compensation. In the few instances of chronic nephritis

of moderate extent the phthalein excretion was considerably reduced. In one case of acute nephritis and in one case of amyloid disease the excretion was greatly reduced, and in some instances of cloudy swelling in acute infections considerable reductions were observed. The article lends strong confirmation to the value, both diagnostic and prognostic, of the test.

2. Wilson and McDowell report that of 399 cases of gastric cancer in which resections were performed, 52% showed definite evidence of association with ulcer; while in the remainder the evidence of association with ulcer was not conclusive, from a study of clinical histories combined with examination of surgical and autopsy specimens, it is concluded that gastric cancer rarely develops except at the site of a previous ulcerative lesion.

3. Moffitt reviews the literature of splenectomy in pernicious anemia, collecting 31 reported cases, to which he adds two original ones. While he agrees with Klempirer and von Decaslello that we have in the operation a means of bringing about a remission of the disease fairly certain when other means have failed, the facts that 8 of the 33 cases died immediately or soon after ths operation and that certain cases have not been benefited, together with the fact that improvement may occur without treatment, even in the worst cases of pernicious anemia, are to be considered before splenectomy is advised.

4. Lynch and Draper discuss the subject of surgical alterations of the course and function of the colon, and describe operations which they propose to avoid the harmful effects of ileosigmoidostomy and other similar procedures as they have hitherto been performed.

5. McCrae reports his experience with the subcutaneous injection of oxygen. While the results in eleven cases of pneumonia were disappointing. in cardiac and renal dyspnea notable relief was usually obtained. It seemed of benefit also in accidents of anesthesia, edema of the lungs and glottis, obstruction of the upper respiratory tract, asphyxia at birth, syncope and electrocution.

7. Palmer from study of a case of extensive resection of the small intestine records the following observations: The loss of nitrogen in the stools was four and five times the normal, and the loss of fat five to six times the normal. There was a high urinary indican. Ammonia formed a much larger part of the urinary nitrogen than normal. [F. W. P.]

The Archives of Internal Medicine.

September, 1914.

1. Siler, J. F., Garrison, P. E., and MacNeal, W. J. *Introduction to the Second Progress Report of the Thompson-McFadden Pellagra Commission.*
2. *Siler, J. F., Garrison, P. E., and MacNeal, W. J. *A Statistical Study of the Relation of Pellagra to Use of Certain Foods and to Location of Domiciles in Six Selected Industrial Communities.*
3. Greenwald, I. *Nitrogen and Sulphur Metabolism in a Cretin.*
4. *Staines, M. E., James, T. L., and Rosenberg, C. *Lymphocyte Increase and Altitude.*
5. Major, R. H., and Nobel, E. *The Glycyltryptophan Reaction in Meningitis.*
6. Bishop, F. W. *Elliptical Human Erythrocytes.*
7. Memson, J. F., and Shaw, A. L. *The Pituitary Gland in Epileptics.*
8. *Batherwick, N. R. *The Specific Rôle of Foods in Relation to the Composition of the Urine.*

2. Siler, Garrison and MacNeal present the first of a series of papers dealing with several phases of the work of the Thompson-McFadden Pellagra Commission in 1913. This paper deals with the relation of pellagra to certain foods and to location of dwelling, as studied by the writers in six cotton-mill villages in South Carolina. They found that the disease spread from a pre-existing case as a center in these six villages. It was transmitted to new victims only through very short distances and chiefly to those immediately associated in the home with a pre-existing case. Frequent use of corn-meal as an article of diet was found not to be an etiological factor in these cases. No evidence was discovered that canned goods have anything to do with the causation of pellagra. Frequent, even daily, use of fresh meat and of eggs afforded no relative protection from the disease. The daily use of milk seemed to diminish somewhat the danger of contracting pellagra.

4. Staines, James and Rosenberg studied the effect of changes in altitude on the lymphocytes of the blood in students and monkeys. They find that at an elevation of 6000 feet the larger lymphocytes are absolutely increased by at least 20%. The basophilic mononuclear elements in the blood at sea-level are about 34%, and at 6000 feet about 42%. The total leucocyte count is approximately the same at both levels. The total polymorphonuclear cells diminish in number in exact proportion to the increase in the number of mononuclears. There is an increase of 22% in the number of erythrocytes at an altitude of 6000 feet.

8. Batherwick reports on an elaborate study of the influence of foods on the composition of the urine. The true acidity of the urine is due to an excess of H+ ions in the excretion. A surplus of OH ions produces alkalinity, and when there is an equal number of H+ and OH ions present the solution becomes neutral. An increase in H+ is accompanied by a significant increase in the ammonia excretion. The solubility of uric acid in urine is closely dependent on the H+. All urines with an acid reaction are supersaturated with uric acid, while alkaline urines are capable of dissolving added uric acid. Foods with a predominance of acid-forming elements increase the urinary acidity. Rice and whole-wheat bread increase urinary acidity. Plums, prunes and cranberries, although yielding a basic ash, nevertheless increase the acid formation because of their benzoic acid content. hippuric acid being formed. Foods which have a preponderance of basic elements lead to the formation of a less acid urine. Potatoes, oranges, raisins, apples, bananas and cantaloups are very efficient in reducing the acid output. Tomatoes are of less value in this respect. [L. D. C.]

October, 1914.

1. *Siler, J. F., Garrison, P. E., and MacNeal, W. J. *The Relation of Methods of Disposal of Sewage to the Spread of Pellagra.*
2. Bridgman, E. W. *Notes on a Normal Presystolic Sound.*
3. Lamb, A. R. *Periarteritis Nodosa—A Clinical and Pathological Review of the Disease. With a Report of Two Cases.*
4. Wessler, H. *Latent Hypertrophy of the Heart in the Nephritis of Children.*
5. *Friedman, J. C., and Strouse, S. *The Non-Specificity of Carbohydrate Tolerance Tests.*
6. *Rosenbloom, J., and Andrews, V. L. *The Potassium Content of Cerebrospinal Fluid in Various Diseases.*
7. Frothingham, C., Jr., and Smillie, W. G. *The Relation Between the Phenolsulphonephthalein Excretion in the Urine and the Non-Protein Nitrogen Content of the Blood in Human Cases.*
8. Ross, E. L., and Singer, H. D. *A Point to be Considered in the Use of the Abderhalden Reaction.*
9. *Walker, I. C. *The Specificity of Cholesterin with Syphilitic Sera and of Cholesterin-Reinforced Heart Antigen in the Wassermann Reaction.*
10. *Wilbur, R. L., and Ophüls, W. *Botulism: A Report of Food-Poisoning Apparently Due to*

Eating of Canned String Beans, with Pathologic Report of a Fatal Case.

11. Blumer, G. *A Note on the Normal Peculiarities of the Heart-Sounds in the Region of the Sternum.*

1. Siler, Garrison and MacNeal studied the relation of methods of disposal of sewage to the spread of pellagra in South Carolina. They found that pellagra morbidity was higher in congested communities using surface privies than in more sparsely settled districts in which similar methods for the disposal of excreta were employed. In the city of Spartanburg the endemic foci of pellagra were located in the districts in which surface privies were in use. In cotton-mill villages equipped with surface privies pellagra was found to be endemic and new cases arose there year after year. In two villages completely equipped with water-carriage systems of sewage disposal it was impossible to find cases which had certainly originated there. Some evidence was found that pellagra spreads in hospitals for the insane more readily in the wards housing untidy patients. The writers conclude that methods of disposal of human wastes may be a determining factor in the spread of pellagra and such means of prophylaxis against this disease should be thoroughly tested.

5. Friedman and Strouse made a clinical study of carbohydrate tolerance tests in a large number of cases in which a functional disturbance of any of the ductless glands was thought to exist. They conclude that while these tests may indicate in a general way functional disability of an organ under suspicion, they can never be interpreted in an absolutely specific manner, for other organs may be involved. Functional inefficiency of one gland sufficient to lower the threshold of carbohydrate metabolism may be entirely compensated for by functional hyperactivity of a correlated gland.

6. Rosenbloom and Andrews estimated the potassium content of the cerebrospinal fluid in normal persons and in cases of paresis, cerebrospinal syphilis, dementia precox, alcoholism, meningitis, encephalitis, typhoid fever and neurasthenia. They find that the potassium content is not increased in degenerative diseases of the cerebrospinal system but is high in the acute cases. The test, however, is of no material value in diagnosis. According to the writers' observations, the potassium content of uncentrifuged cerebrospinal fluid was higher than that of centrifuged fluid. No relation was found, however, between the number of cells in the fluid and its potassium content, or between the potassium content and the globulin reaction.

9. Walker presents clinical evidence to show that cholesterinized alcoholic extracts of human heart have a specific fixation property with syphilitic sera and that they do not give non-specific fixation with non-syphilitic sera, provided the re-agents are accurately titrated. The serum of a syphilitic patient contains something for which cholesterin has a definite fixation power in the presence of complement.

10. Wilbur and Ophüls report twelve cases of botulism, one fatal, due to the eating of domestically prepared canned string beans served without preliminary heating. The methods of sterilization under pressure in use by canning factories seem to prevent the growth of B. botulinus in their pack. In the fatal case reported the gross autopsy findings were negative except for moderate hyperemia of the cerebral vessels, especially at the base of the brain and in the region of the fourth ventricle. There was marked hyperemia of the viscera, especially the liver, kidneys and intestines, and bronchopneumonic lesions in the lungs. Microscopic examination of the brain showed many vascular thromboses, especially about the brain stem and involving the nuclei of most of the cranial nerves. Such lesions explain the clinical phenomena better than the hypothesis of a specific action of botulin on certain ganglion cells. [L. D. C.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

No. 36. September 3, 1914.

1. Strauss, H. *The Dietetic Treatment of Hyperacidity, Hypersecretion and Peptic Ulcer.*
2. Kulenkampff, D. *Recent Progress in Inhalation Anesthesia.*
3. *Tschertkoff, J. *Indicanemia and Uremia.*
4. *Hafemann, G. *The Albumin Content of Tuberculous Sputum.*
5. Raudnitz. *A Substitute for Milk of Almonds.*

3. Tschertkoff has tested the blood serum for the presence of indican as a sign of impending uremia. The method used consisted in precipitating the albumin with trichloracetic acid, filtering, and testing the filtrate for indican by Obermayer's re-agent. At the same time the blood urea was estimated. Tschertokoff finds that in nephritis without renal insufficiency there is never a significant urea retention nor is indican present in the serum. When, however, the blood urea reaches a certain concentration, indicanemia is found. Thus indican in blood serum affords the same unfavorable prognostic information as increased blood urea.

4. Hafemann has analyzed the albumin content of 171 sputa, and has compared these findings with sputum examination for tubercle bacilli. From his results, he concludes that more than one albumin test must be made to allow for any deductions, and that if bacilli are found, albumin is always present. He feels that the most probable reason for this is that the albumin content of sputa depends on metabolic products of the tubercle bacillus. [R. F.]

No. 37. September 10, 1914.

1. *Brentano, A. *The Treatment of Gun-shot Wounds of Bones and Joints.*
2. Editorial. *Surgical Experience in the Russo-Japanese War.*
3. Croner, F. *The Sterilization of Drinking Water in the Field.*
4. Hoehne. *An Unusual Case of Bechterew's Disease (Spondylitis Achylopoetica Chronica).*
5. *Kromayer. *Defects in the Salvarsan Treatment of Syphilis.*
6. Orlowski. *Do Sterile Gonorrheal Shreds Cause Leucorrhea?*

1. In the field, Brentano has found that infected wounds are of two types. The first is caused by the introduction of an infecting agent at the time the wound is made. The second is caused by organisms which are introduced into the wound during treatment. To avoid the latter infections all wounds at first must be treated as though sterile. Dry aseptic dressings should be applied and such bandages as to make the affected parts as comfortable as possible. If subsequent infection develops, drainage is indicated, and amputation as a final resort. On the whole, the infections which Brentano has seen have been relatively mild. Tetanus and erysipelas were rare, gas bacillus and pyocyaneus infections were somewhat commoner, but ordinary pus infections were seen most frequently.

5. Kromayer recalls that until four years ago, mercury was used commonly during the past three centuries in the treatment of syphilis. It has acted quickly and effectively in 90% of the cases treated and has been used over long periods of time without ill effect. Four years ago salvarsan was introduced. Results from its use show that the clinical manifestations of the disease disappear with miraculous speed, and that the general condition of the patient improves under treatment.

Salvarsan has certain disadvantages. It must be given intravenously, which may disturb patients; it is expensive; and cases of relapse or sudden death may occur during treatment.

Kromayer feels that relapses and accidents occur less often when repeated small doses are given instead of one or two very large doses. A combined mercury and salvarsan cure is the most effective form of treatment. [R. F.]

Obituary.

EDWARD RUSSELL COGSWELL, M.D.

EDWARD RUSSELL COGSWELL, M.D., died at his home in Cambridge, December 22, 1914, aged 73 years. Dr. Cogswell was born at South Berwick, Me., June 1, 1841. He entered Harvard College with the class of 1864, left college in 1862 to serve with the 44th Regiment of Volunteers, Mass. V. M., and was mustered out of the service in June, 1863. He received the degree of M.D. from Harvard in 1867, A.B. as of 1864 in 1871, and A.M. in 1872. He became a Fellow of The Massachusetts Medical Society in 1867 and was transferred to the retired list in 1906.

For eleven years Dr. Cogswell served on the Cambridge School Committee and at the time of his death was president of the Cambridge Savings Bank, a director of the Charles River Trust Company, and a trustee of the Cambridge Hospital.

He is survived by a daughter and by three sons, one of them being also a physician.

Miscellany.

BELGIAN PHYSICIANS' RELIEF FUND.

IN response to an appeal made by Dr. Charles Jacobs of Brussels for aid for civilian physicians, pharmacists and patients in devastated Belgium, a Committee of American Physicians for the aid of the Belgian profession, has been organized. It is composed of the following members:

Victor C. Vaughan, President American Medical Association.
William L. Rodman, President-elect American Medical Association.
John B. Murphy, President Clinical Congress of Surgeons of North America.
Charles H. Mayo, President-elect Clinical Congress of Surgeons of North America.
J. M. T. Finney, President American College of Surgeons.
J. Riddle Goffe, President The Seventh International Congress for Obstetrics and Gynecology.
George H. Simmons, Editor *Journal of the American Medical Association.*
Thomas L. Stedman, Editor of the *Medical Record.*,
Robert M. Green, Editor of the BOSTON MEDICAL AND SURGICAL JOURNAL.
Claude L. Wheeler, Editor of the *New York Medical Journal.*
Franklin H. Martin, Editor of *Surgery, Gynecology and Obstetrics.*
Howard Canning Taylor, New York, N. Y.
Frank F. Simpson, Pittsburgh, Pa.

The officers of this committee are: Dr. Martin, chairman; Dr. Rodman, vice-chairman; Dr. Simpson, treasurer; and Dr. Taylor, secretary.

The names of other physicians will be added to this later. The executive committee consists of:

Dr. Franklin H. Martin, Chairman, 30 North Michigan Boulevard, Chicago, Ill.
Dr. J. Riddle Goffe, 171 W. 71st Street, New York City.
Dr. Howard Canning Taylor, Secretary, 32 W. 50th Street, New York City.
Dr. Frank F. Simpson, Treasurer, 7048 Jenkins Arcade Building, Pittsburgh, Pa.

Cable inquiries are being made to learn direct from Belgium and Holland the most urgent needs of the profession at this time.

The commission for relief in Belgium will deliver supplies as far as war conditions will permit, and without cost to our committee for transportation and delivery in Belgium. Through the medium of the commission for relief in Belgium efforts are being made to standardize boxes of medical supplies for civilians and to perfect diplomatic arrangements permitting their shipment into Belgium. In order to facilitate delivery it has been arranged that all shipments by the Committee of American Physicians will be made in boxes painted *yellow.* This is in conformity with the color scheme adopted by the commission for relief in Belgium which is designed to facilitate the safe passage of articles across the seas, through the various countries they must traverse and to their ultimate destination.

All subscriptions to the fund for the aid of Belgian physicians should be sent in the form of checks or postal orders and should be made payable to Dr. Frank F. Simpson, treasurer. They should be sent to Dr. Frank F. Simpson, 7048 Jenkins Arcade Building, Pittsburg, Pa.

As many signatures are illegible, all checks should be accompanied by a card giving the donor's name and address in typewriting or printing.

The Union Trust Company of Pittsburg has been selected as the depository of the committee. Checks will be promptly deposited and will at once be available for the purchase of supplies by the Executive Committee.

A weekly report of receipts and expenditures will be made by the Treasurer to the members of the committee and through the medium of the medical journals, to the medical profession as well.

The following is the report of the Treasurer of the Committee of American Physicians for the relief of the Belgian profession, for the week ending December 26, 1914.

Contributions:

Union Trust Company	Banking Facilities
Sterrett & Acheson, Attorneys	Professional Services
F. O.	$ 25.00
F. H. M.	100.00
F. F. S.	100.00
S. P.	25.00
G. C. S.	5.00
S. A.	20.00
E. W.	25.00
B. L.	10.00
T. E. S.	20.00
T. L. S.	25.00
R. S. E.	10.00
M. W. R.	10.00
W. A. P.	25.00
M. C. S.	5.00
Total	$405.00
Disbursements	None

F. F. SIMPSON, M.D., *Treasurer.*

◆

MILITARY NOSTALGIA.

THE issue of the *Lancet* for Nov. 28 presents an interesting editorial account of military nostalgia. The Italians speak familiarly of nostalgia as a disease of recruits, but apparently it has not hitherto been recognized as such by the British.

"Nostalgia as a specific disease especially afflicting recruits has never figured in English textbooks of medicine or mental disease, but our French allies had up to about the year 1877 issued a whole literature on the subject. Switzerland, as we are informed by Jean Jacques Rousseau, was the original home of what was long regarded as a dangerous malady. The Swiss, he asserts, were forbidden to listen to the music of the Ranz-des-Vaches if it happened to be played to them when on the march, since the monotonous strains, associated in their minds with home and the mountains, led to desertions, sickness, and death. Johannes Hofer, a Mulhouse physician, is perhaps the original authority on *mal du pays,* which he calls 'pothopatridalgia.' His book was published in Basle in 1688. He speaks of a specific disease, tells many stories of its extraordinarily fatal results, and transcribes in quaint notation the music of the Ranz-des-Vaches, or Kuh-Reihen, to the sound of which he directly traces his 'pothopatridalgia.' As years pass the picturesque element in home sickness becomes modified, and in 1837 we find the subject treated at great length and with a complete appearance of scientific justice by Paulinier in a Montpellier thesis. He describes the pallor, taciturnity, absolute dejection, loss of appetite, and so forth, which attack the recruit suffering from home sickness, and adds the curious observation that in the great wars of the French Republic the illness was unknown owing to the enthusiasm of the soldiers for France, every inch of which had become home in their regard. Later, when the Napoleonic wars had sapped the vitality of the nation, the condition of *mal du pays* became almost epidemic among the boy recruits of 1812 and the following years. There is little to choose between Paulinier's views and those of many of his successors. They all describe much the same set of symptoms. Writing as lately as February, 1863, an American army surgeon, De Witt C. Peters, speaks of the incidence of this form of melancholia among young recruits drawn from the Eastern States of the Union and sent to fight in the, to them, enervating climate of the South. 'The hospitals of New Orleans,' he says, 'during the past summer were filled with such cases. . . The majority of them were young men from the Eastern states, whose love of home and kindred is a characteristic trait.' His definition of the symptoms tallies with that of his predecessors. The symptoms produced by this aberration of mind are, first, great mental dejection, loss of appetite, indifference to external influences, irregular action of the bowels, and slight hectic fever. As the disease progresses it is attended by hysterical weeping, a dull pain in the head, throbbing of the temporal arteries, anxious expression of the face, watchfulness, and increased fever and wasting. Among young prisoners of war it is the worst complication to be encountered, as the writer can truthfully affirm."

Doubtless, as in all functional psychoses, military nostalgia depends largely on the emotional temperament of the race and of the individual.

◆

EXAMINATION FOR ADMISSION TO AMERICAN COLLEGE OF SURGEONS.

AT the annual meeting of the American College of Surgeons in Washington, D. C., on November 16, the following report was presented by the committee on examination for admission.

"Your committee begs to submit the following tentative scheme for admission to the American College of Surgeons: On and after November 1, 1914, the candidate for admission to the American College of Surgeons, in addition to fulfilling the conditions previously indicated, *i.e.* that he shall have been graduated from a medical school for not less than five years, and shall present evidence of personal probity and specialization in surgical lines, shall be required to lay before the committee on examination:

"1. Evidence that applicant has served at least one year as a hospital interne and three years as assistant, or one year as first assistant to a surgeon of recognized ability and with an adequate hospital service. From those who were graduated before 1915 an equivalent surgical experience shall be acceptable, especial importance being attached to laboratory and research work.

"2. Evidence that he has visited other surgical clinics and laboratories than those to which he has been officially appointed, giving the dates of such visits, the time spent, and a brief summary of the work witnessed or performed.

"3. An abstract of at least fifty consecutive major operations which he has himself performed, this abstract to contain the name and address of the doctor or consultant referring the case; the pre-operative diagnosis; the anesthetic given, by whom, the quantity and the time of administration; the date of operation, and a brief description of it, with a note of the time required for its performance, calculated from the first incision to the beginning of the application of the dressing; the post-operative course, and a mention of complications, if such occurred; not only those conditions usually classed as such, but consecutive bleeding which calls for measures directed toward its control, hematoma of sufficient extent to require evacuation or drainage or suppuration, as slight even as a stitch abscess, are to be regarded as complications. The condition on discharge from the hospital with subsequent course of the case up to the date of application for membership, or as near this as is practicable. The applicant shall supplement his individual report of operations by a further abstract report of at least fifty cases in which he has acted as assistant.

"4. All applicants for fellowship to the American College of Surgeons whose date of graduation is 1920 or later shall be graduates from medical schools which shall have demanded of its matriculates two years of collegiate training, or the equivalent, including biology, chemistry, and physics. If the candidate's school of graduation be not accredited by the American College of Surgeons, he shall be required to pass a technical examination.

"5. Surgeons widely recognized by the profession as leaders of progress and exponents of finished technic, by a unanimous vote of the board of regents may be admitted to fellowship on recommendation of the committee on examination."

◆

THE MEDICAL ASSOCIATION OF THE ISTHMIAN CANAL ZONE.

It is the desire of the Medical Association of the Isthmian Canal Zone to be represented at the Panama-Pacific Exposition, to be held in San Francisco during the year 1915.

It was decided at the November meeting of the Society to hold an extraordinary session at the Exposition some time during the Medical Period, which begins June 13 and ends July 3. The most desirable time appears to be the week beginning June 14, 1915, as this date is near the meeting to be held by the American Society of Tropical Medicine and the meeting of the American Medical Association.

It seems appropriate that our Society should be represented, and it is therefore earnestly requested that all former and present members will endeavor to assemble at San Francisco during that week, and be prepared to support those in charge of the session.

Former members who now live near San Francisco will be asked to take the lead in perfecting the plan, and as soon as the temporary chairman can be appointed, the members are requested to get in early communication with him and express their intentions in regard to attendance, and also offer any suggestions in regard to making the extraordinary session a success.

Due notice will be given as soon as the temporary chairman can be named.

H. C. CLARK, *Secretary-Treasurer.*
Ancon, C. Z

December 16, 1914.

◆

UNITED STATES CIVIL-SERVICE EXAMINATION.

The United States Civil Service Commission announces an open competitive examination for physicians, for men only, on Feb. 3, 1915. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Indian Service at the Hayward School, Wisconsin, at $1,100 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Applicants must be graduates of or senior students in recognized medical schools. The names of such senior students will not, however, be entered on the eligible register in the event they pass the examination until they have furnished proof of actual graduation.

Persons who meet the requirements and desire this examination should at once apply for Form 1312, stating the title of the examination for which the form is desired, to the United States Civil Service Commission, Washington, D. C. No application will be accepted unless properly executed, including the medical certificate, and filed with the commission at Washington in time to arrange for the examination at the place selected by the applicant. The county officers certificate in the application form need not be executed. The exact title of the examination as given at the head of this announcement should be stated in the application form.

◆

APPOINTMENTS.

On Nov. 23 DR. JOSEPH W. COURTNEY, of Boston, was appointed, by the Massachusetts State Board of Insanity, examiner of insane prisoners, in place of DR. HENRY STEDMAN, who resigned.

On Dec. 23, DR. THOMAS J. BARRETT, of Worcester, Mass., was elected chairman of the Massachusetts State Board of Registration in Dentistry, in place of DR. JOHN F. DOWSLEY, who resigned after a service of twenty years.

◆

SOCIETY NOTICE.

The regular mid-winter meeting of the Middlesex South District Medical Society will be held in the Boston Medical Library at noon on Jan. 13, 1915. Dr. John Lovett Morse, of Boston, "Remarks on Infant Feeding and the Disturbances of Digestion in Infancy."

LYMAN S. HAPGOOD, M.D., *Secretary.*

ELECTRIC
CENTRIFUGES
AND
VACCINE
SHAKERS

Send for Catalog C

INTERNATIONAL INSTRUMENT
COMPANY
23 CHURCH STREET - CAMBRIDGE, MASS.

INDEX TO ADVERTISERS

PAGE
Attleboro Home Sanitarium.................. 11

Beal Nurses' Home and Registry.............. 13
Benger's Food.............................. 16
Borden's Condensed Milk Co.................. 9
Boston City Hospital Male Nurses' Club........ 13
Boston Nurses' Club Registry................. 18
Bournewood Hospital...........Brookline, Mass. 12

Central Directory, Suffolk County Nurses....... 13
Channing Sanitarium...........Brookline, Mass. 12

Douglas Sanatorium...........Dorchester, Mass. 11
Dr. Givens' Sanitarium.........Stamford, Conn. 12
Dr. Mellus' Private Hospital......Newton, Mass. 12

Elm Hill..............For Feeble-Minded Youth 12

Fisk & Arnold.................Artificial Limbs 14
Fisk Hospital.................Brookline, Mass. 13
For Rent.................................... 6
For Sale.................................... 6
French Lick Springs...............Pluto Water 14

Glenellis Sanitarium..............Andover, Me. 12
Glenside Sanitarium.......Jamaica Plain, Mass. 12

Harvard Dental School....................... 10
Harvard Medical School...................... 10
Herbert Hall Hospital..........Worcester, Mass. 12
Highland Spring Sanatorium......Nashua, N. H. 11
Household Nursing Association................ 18

International Instrument Co.................. 15

Jefferson Medical College of Philadelphia........ 11

King's Puremalt Department.................. 4
Knoll & Co.................................. 9

Macullar Parker Co....................Clothing 7
Mahady, E. F. Co............................ 14
Malden Registry of Nurses.................... 18

PAGE
McKesson & Robbins......................... 2
Medical School of Maine........Bowdoin College 10
Medical Echo............................... 6
Medico-Chirurgical College of Philadelphia...... 11
Mellin's Food Co............................ 8
Millet Tuberculosis Sanatorium................ 18

New England Orthopedic Apparatus Co.......... 8
Newton Sanatorium.........West Newton, Mass. 12
New York Polyclinic Medical School............ 10
New York University........Medical Department 11
Notices 6
Nurses' Directory........................... 18

"On-the-Hill" Sanitarium......Watertown, Conn. 12

Packer's Tar Soap........................... 15
Park, Davis & Co...................Chemists 5
Phillips' Chemical Co........................ 8
Pierce, Dr. A. H.......................Card 12
Pomeroy Company 16
Primrose Maternity Home........Batavia, N. Y. 11

Radium Chemical Co.......................... 5

Saunders, W. B. Co.....................Books 1
Schering & Glatz............................ 2
Sharp & Dohm......................Chemists 4
Sherman's Bacterins......................... 14
Sundelius, Gustaf....................Masseur 18
Syracuse University.........College of Medicine 10

To Let...................................... 6
Tower Hall.......................Derry, N. H. 12
Tufts College Medical School.................. 10

Waltham Registry of Nurses................... 18
Wanted 6
Warren Chambers............................ 6
Wellesley Nervine........................... 12
West Newton Home School..................... 11
Westport Sanitarium......................... 11
Woodside Cottages...........Framingham, Mass. 12

A
PURE
SOAP

For 40 Years the Standard of Its Class

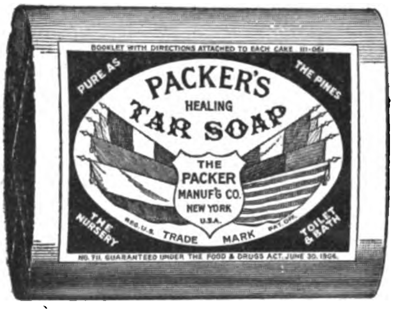
The purity, reliability, constant unvarying quality and special properties of **Packer's Tar Soap** have given it unique value for toilet, hygienic or therapeutic use. It is pleasant to use, and is unsurpassed for cleansing purposes.

INGREDIENTS:

PINE TAR
Antiseptic, deodorant, healing, anti-pruritic, tonic.

PURE GLYCERINE
Soothing, softening and cleansing.

SWEET VEGETABLE OILS
Emollient, healing.


BOOKLET WITH DIRECTIONS ATTACHED TO EACH CAKE
PURE AS THE PINES
PACKER'S
HEALING
TAR SOAP
THE PACKER MANUF'G CO. NEW YORK U.S.A.
THE NURSERY
TOILET & BATH
REG. U.S. TRADE MARK PAT. OFF.
NO. 711 GUARANTEED UNDER THE FOOD & DRUGS ACT, JUNE 30, 1906.

USES:

For the Toilet and Bath.
In the Nursery.
In the Operating Room.
In the Obstetrical Chamber.
For the Scalp as a Shampoo.
Dandruff.
In many Skin Diseases as a preliminary and an adjunct to treatment.

PACKER MFG. CO., 81 and 83 Fulton Street, New York

Prescribed by the Medical Profession for 35 years.

A CEREAL FOOD
different from all others

"Mr. Benger's admirable preparation."
The LANCET.
(London, Eng.)

because it contains the natural digestives—Trypsin and Amylopsin.

It is used regularly in Hospitals, Sanatoria, Nursing Institutions, etc., throughout the world, and prescribed and recommended by leading physicians in practice and in many standard medical works.

The outstanding features of Benger's Food is its power of self-digestion, and milk modification, due to the two digestive principles contained in it. This occurs during its preparation with fresh new milk and is simply regulated by allowing the Food to stand from 5 to 45 minutes; it is stopped by boiling.

Benger's Food

Reg. U S. Pat. Off.

FOR INFANTS, INVALIDS AND THE AGED.

A physician's sample, with full particulars, will be sent post free to any member of the medical profession on application:—

BENGER'S FOOD LTD., 92, WILLIAM STREET, NEW YORK.
Manufactory——MANCHESTER, Eng.
Branch Office——SYDNEY (N.S.W.), 117, PITT STREET.—— Depots throughout Canada.

M6od US

POMEROY
FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY
41 WEST STREET, BOSTON

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

THE BOSTON
Medical and Surgical
JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 2

THURSDAY, JANUARY 14, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

On Ovarian Transplantation: With Report of a Case of Implantation Into the Uterus with Resulting Pregnancy. *By Malcolm Storer, M.D.*, Boston.

A Study of the Epilepsy of Dostojewsky. *By L. Pierce Clark, M.D.*, New York.

Occupational Disease and the Public Health. *By Donald B. Armstrong, M.D.*, New York.

Modification of Technic for Hare-Lip Operation. *By W. E. Ladd, M.D.*, Boston.

CLINICAL DEPARTMENT

Partial Tenotomies by the Todd-Harmon Method. *By Holbrook Lowell, M.D.*, Boston.

The Treatment of Pneumonia in Children. Report of 104 Consecutive Cases. *By Harold W. Dana, M.D.*, Boston.

MEDICAL PROGRESS

Seventh Report of Progress in Orthopaedic Surgery. *By Robert B. Osgood, M.D., Robert Soutter, M.D., Hermann Bucholz, M.D., Harry C. Low, M.D., Murray S. Danforth, M.D.*, Boston.

EDITORIALS Transfer of the Boston Quarantine Service.

The Practise of Medicine in China. The Transplantation of Tissues and Organs.

Health Conditions in Boston in 1914. An Absurd Medical Bill.

For complete table of contents, see first text page.

JUST ISSUED

Allen's Local and Regional Anesthesia

This work is complete. You get history and evolution, principles, physiology, toxicology, and technic. You get a chapter on nerves and sensation, giving particular attention to *pain*—what it is and its psychic control, and a chapter on osmosis and diffusion. Each local anesthetic is taken up in detail, giving very special attention to *cocain* and *novocain*, pointing out their action on the nervous system, the value of adrenalin, paralysis caused by cocain anesthesia, control of toxicity. You get Crile's method of administering adrenalin and salt solution, the exact way to produce the intradermal wheal, to pinch the flesh for the insertion of the needle —all *shown* you step by step. You get Crile's *anoci-association;* anesthesia by quinin and urea, and by the magnesium salts, spinal and epidural analgesia, paravertebral, parasacral, intra-arterial, intravenous, and general anesthesia with local anesthetics. The production of local anesthesia in the various regions is taken up in detail. Abdominal work covers 50 pages, genito-urinary work and hernia another 50 pages. You get local anesthesia for rectal surgery, gynecologic operations, and Cesarean section; for head and skull work, for eye, ear, nose and throat work, and a large section on *dental anesthesia.*

Octavo of 625 pages, with 255 illustrations. By CARROLL W. ALLEN, M.D., Instructor in Clinical Surgery at Tulane University of Louisiana. With an Introduction by RUDOLPH MATAS, M.D., Professor of Surgery at Tulane University of Louisiana.

Cloth, $6.00 net; Half Morocco, $7.50 net.

W. B. SAUNDERS COMPANY **West Washington Square, Philadelphia**

Entered at the Post-office at Boston as second-class matter

Probably no cereal is more welcome on hospital bills-of-fare.

H-O is especially tasty.

H-O is quickly prepared.

Over two hours of steam-cooking at the mill is responsible for its flavor and its easy preparation.

H-O
THE *ONLY* STEAM-COOKED
Oatmeal

The H-O Company, Buffalo, N.Y.
Makers of H-O, Force, *and* Presto.

THE DUCTLESS GLANDS

We are able to supply limited quantities of those mentioned below, *with full assurance of their identity and quality.* Their field of usefulness has not been well defined, and the evidence so far available is mainly suggestive. In view of these facts, we supply the material without recommendation.

PARATHYROIDS (DESICCATED).

Tablets, each equivalent to 3/5 grain of the fresh gland.

Employed in such diseases as paralysis agitans, chorea, epilepsy and tetany.

PINEAL GLAND (DESICCATED).

Tablets, each equivalent to 1/2 grain of the fresh gland.

Suggested for use in treating mentally defective children, particularly in cases where there is no physical defect. Of possible value in mongolism.

ANTERIOR LOBE OF THE PITUITARY BODY (DESICCATED).

Tablets, each containing 2 1/2 grains of the desiccated tissue.

Of possible value in peculiar disturbances of metabolism, delayed development (both mental and physical), and certain derangements of the genito-urinary system.

LITERATURE SUPPLIED ON REQUEST.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.

The Boston Medical and Surgical Journal

Table of Contents

January 14, 1915

ORIGINAL ARTICLES.

On Ovarian Transplantation: With Report of a Case of Implantation Into the Uterus With Resulting Pregnancy. *By Malcolm Storer, M.D.*, Boston.............. 41
A Study of the Epilepsy of Dostojewsky. *By L. Pierce Clark, M.D.*, New York.............................. 46
Occupational Disease and the Public Health. *By Donald B. Armstrong, M.D.*, New York.......................... 51
Modification of Technic for Hare-Lip Operation. *By W. E. Ladd, M.D.*, Boston.............................. 54

CLINICAL DEPARTMENT.

Partial Tenotomies by the Todd-Harmon Method. *By Holbrook Lowell, M.D.*, Boston.............................. 56
The Treatment of Pneumonia in Children. Report of 104 Consecutive Cases. *By Harold W. Dana, M.D.*, Boston.... 58

MEDICAL PROGRESS.

Seventh Report of Progress in Orthopaedic Surgery. *By Robert B. Osgood, M.D., Robert Soutter, M.D., Hermann Bucholz, M.D., Harry C. Low, M.D., Murray S. Danforth, M.D.*, Boston.............................. 59

SOCIETY REPORTS.

The Philadelphia County Medical Society. Meeting of November 11, 1914.............................. 63

BOOK REVIEWS.

Chemistry and Toxicology for Nurses. By Philip Asher, M.D.. 65
A Medical Dictionary for Nurses. By Amy E. Pope........ 65
The Life and Letters of Nathan Smith, M.B., M.D. By Emily A. Smith.............................. 65
A Treatise on Clinical Medicine. By William H. Thomson, M. D.............................. 65

EDITORIALS.

Transfer of the Boston Quarantine Service.................. 66
The Practise of Medicine in China.................. 67
Transplantation of Tissues and Organs.................. 69
Health Conditions in Boston in 1914.................. 69
An Absurd Medical Bill.................. 70
Medical Notes.................. 70

Current Literature.................. 78

MISCELLANY.,

The Transfer of the Quarantine Station.................. 76
British Red Cross Hospitals.................. 77
Massachusetts Society for Mental Hygiene.................. 78
The French Birth-Rate.................. 79
Belgian Physicians' Relief Fund.................. 80
Notices, Appointments, Resignations, Recent Deaths, Books and Pamphlets Received.................. 80

Original Articles.

ON OVARIAN TRANSPLANTATION: WITH REPORT OF A CASE OF IMPLANTATION INTO THE UTERUS WITH RESULTING PREGNANCY.[*]

By **Malcolm Storer**, M.D., Boston.

That the question of the feasibility and utility of ovarian transplantation is one that has attracted considerable attention in recent years is sufficiently attested by the hundred or more articles on the subject I have looked over, all published since Morris of New York in 1895 reported the first case of successful transplantation in the human. In the same year, working independently, Knauer (*Centrlbl. f. Gyn.*, 1896) performed a number of successful experiments upon animals. As the utility of the procedure is evidently still one of the moot points in gynecology, I have been led to prepare this survey of what has thus fàr been accomplished. The best papers on the subject are those of Martin (*Trans. Am. Gyn. Soc.*, 1911) and *Sauvè* (*Les greffes ovariennes: Thèse de Paris,* 1910) and it is largely upon their observations that this paper is based.

FEASIBILITY OF TRANSPLANTATION.

The publications of some fifty observers show that ovaries or parts of ovaries can be successfully transplanted in animals from one part of the body to another, especially if autografts are used. In animals these experimentally transplanted ovaries generally live and flourish indefinitely and in many cases the animals have produced young with regularity (*e. g. Grigorieff, Centrlbl., f. Gyn.*, 1897, four pregnancies in rabbits).

While in animals autografts are generally successful, the transplantation of ovaries from another animal (heterografts) are apt to be as uniformly unsuccessful. For instance, Knauer had 3 failures in 12 autografts and 12 failures in 13 heterografts. As to what failure or success consists of I think it is fair to regard the experiment as a success clinically if six months after the operation the ovary is still evidently functioning or if conception follows. Of course absolute proof that a graft has taken means that corpora lutea and interstitial cells can be demonstrated microscopically after an interval of say six months. Transplantation of the ovaries from one species to another (rabbit to cat) have been very generally unsuccessful. Occasionally it has been done. Fuges grafted a number of ovaries of monkeys into the spleens of rabbits with occasional successes. So too the grafting of ovaries into males (*e.g.* into the testis) is generally unsuccessful, although Katsch and Schultz have managed to do it.

Naturally the study of the end results of ovarian transplantation in humans is a very different thing from that in animals owing to the difficulty of controlling the experiment with subsequent visual investigation. Even such positive occurrences as a continuation of menstruation and subsequent pregnancies are to be regarded with suspicion unless the reputation of the reporter is such as to give moral certainty that no fragment of ovarian tissue was left behind. This applies of course especially to cases of chronic salpingo-oöphoritis where the many and dense adhesions render at least possible such an accident. Even masters of surgery may easily do this. Lucas Championnière (*Bull. Soc. Chir.*, 1909) relates a case where he removed both ovaries and menstruation kept up. Next year he opened the abdomen again and removed a piece of ovary that had been left behind. Generally however such pieces are too small and too buried in new adhesions to be found.

---

[*] Read at the Obstetrical Society of Boston, October 27, 1914.

It may be said of ovarian grafting in humans that while the chance of the graft taking is distinctly smaller than is the case with animals, still a majority of the autografts do take, while success with heterografts is only exceptional. Even when the transplanted ovary gradually dies, as is often the case, it is a matter of common experience that its function is preserved for at least several months, the menopause being a gradual rather than an abrupt one. From the few histological studies that have been made of grafted ovaries it seems that there is at first almost always a more or less extensive degeneration of the graft, especially of its cortex, due to insufficient blood supply, with often a later regeneration (Preobachensky and Katasch). Of course if this regeneration be a real and permament one the permament functional activity of the organ may be expected. Pankow reports careful microscopical examination of a transplanted ovary after several years of menstrual life that showed all the characteristics of a normal ovary.

Technique. Views vary greatly as to the technique of transplantation and as to whether to take the whole ovary or only a part of it. Most men think that it is quite sufficient to stitch a piece of ovary (size generally not stated) to any raw surface and that the vascular anastomosis procedures of Carrel and Guthrie are more or less of a surgical *tour de force* implying a degree of dexterity that is given to few men and that is in fact quite unnecessary. Mauclaire (*Bull. et Men. Soc. Chir. Paris,* 1910) thinking that frequently lack of success is due to poor blood supply and not attaching especial importance to any re-establishment of nervous current claimed necessary by some writers, transplants the ovary into the subcutaneous connecting tissue and establishes a copious blood supply by anastomosing the epigastric artery with one of the ovarian vessels. He has done by various methods 109 autografts, 5 heterografts and 5 cold storage grafts, some of the latter ovaries being several weeks old.

Tuffier, (*Bull. Soc. Chir., Paris,* 1911) who has done some 130 cases, merely slips the ovary into the subcutaneous tissue of the abdominal wall without suture. In his experience with this method the grafts generally live, at first absorbing nutrition by imbibition, though quickly new vessels are formed to supply them. Knauer and Riffert, experimenting on animals, have found these new vessels in four and seven days respectively.

While some men transplant the whole ovary, most experimenters prefer a segment with a cut surface to come into apposition with the raw nourishing surface. Martin, who has probably done more ovarian grafting than any man in this country, advises grafts not more than 1/8 inch thick.

The piece of ovary may be grafted anywhere. Tuffier, as I have said, places it in the subcutaneous tissue of the abdominal wall, or as in his later cases, under the sheath of the external oblique, regarding that as affording a condition biologically perfect for the nourishment of the graft, where it will be freely bathed in lymph. Cramer prefers the preperitoneal space beneath the rectus or the subserous tissue of the anterior uterine wall. Kronig and Pankow also prefer the anterior pouch of Douglas. Mauclaire and Marchese like the anterior sheath of the rectus. Dudley Palmer (*Post Graduate,* 1900) sewed a piece of ovary into the uterus, so that it presented in the uterine cavity.

Engel (*Berl. Klin. Wochenschr.,* 1912) implanted a heterograft into the uterine stump of a woman upon whom he had done a double ovariotomy and hysterectomy three years previously. She had been having severe hot flashes and nervous disturbances. Seven weeks later she was having no hot flashes and eventually recovered completely. Of course time and suggestion may have played their parts. Other cases of distinct success with heterografts might be cited. Glass (*N. Y. Med. Jour.,* 1899) transplanted a whole ovary into a woman who two years after a double ovariotomy was suffering from exaggerated symptoms of the menopause. Six days later she had erotic sensations(!), menstruated in 15 days and eight months later was recovered.

Estes (*Penn. Med. Jour.* 1909) in forty cases (humans) implanted the ovary in the site of the tubal insertion, making a wedge shaped pocket in the uterine muscle to receive it, but apparently not opening the uterine cavity. As he says two cases of pregnancy were seen in cases where this procedure was used it is evident that the uterine portion of the tube remained patulous.

Uffreduzzi (*Ann. di Obstetrica,* 1911) implanted portions of ovary in the uterine cornua of dogs (20 cases). All showed when killed later at various periods a necrobiosis (degree not stated) and according to him in not a single case were the conditions such that ovulation could have taken place into the uterine cavity nor were in any case any corpora lutea found in the part of the ovary nearest the uterus. This observer seems somewhat of a pessimist, as he makes the further observation that artificial stomata built in clubbed Fallopian tubes will always close up before long, a statement by no means borne out by my personal experience of several pregnancies following the building of such artificial stomata. Anyway Estes' two cases of pregnancy following the implantation of ovarian tissue in the uterine cornua sufficiently discredit Uffreduzzi's statement that uniformly such grafts cannot ovulate into the uterus, in the human at any rate.

Frank (*Centrbl. f. Gyn.,* 1898) was apparently the first to implant ovarian grafts into the uterus or stump of oviduct. Morris and many others have found the broad ligament the best seat for transplantation, while Foa prefers the posterior pouch of Douglas, and Grigorieff and Ribbert the mesentery. For purposes of experiment ovarian tissue has been grafted into the most out-of-the-way places (chiefly, of course, in animals) such as the muscles of the upper thigh (Cramer, Kayser), between the breasts (Brewitt), and into the kidneys, liver, spleen, brain, and doubtless still others. My feeling is that except for the indication of sterility the graft should be placed in a position where it will not be confined so as to allow for a periodic congestion at the menstrual period. Hence I should look askance at transplanting into such places as the abdominal wall and elect for instance the pocket between the insertion of the round ligament and the Fallopian tube. Of course I am not blind to the fact that should anything go wrong with the graft it is conveniently reached if merely in the abdominal wall. There may be something in Lukaschevitsch' suggestion (*Vratsch*, 1901) that it is wise to place the graft as near as possible to its original site. If the tube has been removed Estes' plan of preparing a wedge-shaped bed for it in the cornu appeals to me. Extreme attention to asepsis is absolutely requisite, the graft should be disassociated from the body as short a time as possible and as few sutures should be used as will suffice to anchor the graft in place, and these should be as superficial as may be. Lukaschevitsch also proposed to transplant a segment of each ovary in case one graft should die.

Pankow (*Zentrlbl. f. Gyn.*, 1908) claims that as the ovary consists of two kinds of tissue, the glandular with its internal secretion, and secondly, the follicular apparatus, which generally necroses anyway and in most of the cases operated upon is not needed, the best results will be obtained if it is possible to destroy this glandular tissue while leaving unimpaired the tissue in charge of the internal secretion. Accordingly, in two cases he exposed the ovaries to be transplanted to a moderately soft Roentgen tube at 25 cm. for ten minutes and then transplanted them. The importance of this procedure is still very much *sub judice*.

One other matter connected with technic is the necessity of exercising the greatest care as to the donor in the case of heterografts. I can well imagine that a suit for malpractice would stand should the donor prove to be a syphilitic. Most of the men who have used heterografts in recent years have availed themselves of the Wassermann reaction.

Internal Secretion. While exact knowledge of the qualities and influence of the much discussed ovarian secretion is still sadly wanting, enough is known about it since Fraenkel's paper in 1913 to warrant the statement that it exerts a profound influence upon the female economy and that after functional ovarian death at the menopause, rightly called the grand climacteric, a woman's physiological life undergoes great modification. The careful researches of Limon and Branca seem to prove that while the cortical portion of the ovary is concerned chiefly with childbearing there is secreted from its interstitial cells a something which, to quote Sauvé, aids in the development of the skeleton, for according to him castrated women are smaller than non-castrated, has influence on the circulating system, increasing the bulk of blood and its degree of hemoglobin, is a powerful controller of the nervous system, works upon various secretions, and has such influence upon the activity of the kidneys (phosphaturia diminishing after removal of ovaries) that by simply measuring the amount of phosphates eliminated Jandy professes to be able to tell whether an ovarian graft has taken or not. Whether or no the ovarian secretion possesses quite such far-reaching qualities it certainly has its great importance, and most men agree that total removal of the ovaries, especially in very young women is followed in many cases by the train of symptoms grouped under the term postoperative or premature menopause, of which gradual atrophy of the genitals and marked increase of fat are the chief signs and marked nervous phenomena the chief symptoms. In other words, the phenomena characteristic of the natural menopause are apt to be compressed into a few months instead of being spread out over a number of years. I know many men are fortunate enough to have no reason to attach much importance to the premature menopause and say their patients never have any trouble to amount to anything. I may have been unfortunate, but I have seen many such cases, suffering to a degree that is very seldom seen in connection with the natural menopause. Looking over the literature, I am rather struck by the fact that the general surgeon, concerned chiefly with the immediate outcome of his operation, sees but little of the premature menopause, while the gynecologist, who is apt to have opportunities for more careful after-study of his cases sees comparatively very many of them. I do not deny that a great deal of nonsense has been written about the premature menopause and many nervous symptoms referred to castration, where probably the presence or absence of the ovaries had but little to do with the matter, except perhaps by suggestion; but on the other hand a sufficiency of cases have made most of us very loath to sacrifice both ovaries, especially in young women. In certain cases, however, for one reason or another, it seems inadvisable to leave either ovary *in situ*, and it is in these cases that ovarian transplantation has chiefly been done, in the hope that thereby the troubles grouped under the term premature menopause would be avoided. It is somewhat hard to draw a conclusion as to how far this hope has been justified. In the first place, there can be little doubt but that in many of the cases in which transplantation was performed at least one ovary or part of one might perfectly well have been left in its original place and that the operation was unnecessary. I notice French surgeons seem to hesitate to leave healthy ovaries. One writer of repute says that the ovaries must be removed in every case of bilateral salpingo-ovaritis and with every uterine tumor of any size. In removing tubes, I have often left the ovaries and hardly ever remove them in hysterectomies or myomectomies in young women. In these uncalled for transplantations, as a good many ovarian grafts die, we have a large series of cases of ovarian insufficiency which would not have existed had transplantation not been done, which, of course, vitiates statistics. On the other hand, while enthusiasts report cases of profound nervous symptoms, lasting for months and even years, disappearing promptly after a successful grafting, and in a few cases even reëstablishment of the long absent menstrual function, other men of experience feel that any good effect from a graft is so problematical that it is not worth doing. This question of the menstrual function after grafts shows the dangers of statistics. A distinguished French opponent of ovarian transplantation states that as menstruation continues in, at most, 17% of the cases of grafting and also continues in some 20% of cases of double ovariotomy anyway, the grafting is of little use. Now I doubt very much that it is the experience of American gynecologists that menstruation continues in 20% of their double ovariotomies. In my limited experience 1 or 2% would be a much truer figure. Of course most of these cases mean that a piece of ovary was left. I remember years ago, when bilateral ovariotomy was more common, Dr. Whitney told me that it was a common experience to find cut surfaces on examining such ovaries. In other cases of menstruation continuing after the removal of ovarian cysts, the cyst may very well have been parovarian and not recognized as such. The truth of the matter as far as grafting for the avoidance of the premature menopause is concerned seems to be about as follows: While in the long run it is very unsatisfactory and transplanted ovaries generally die after a year or so, they are apt to remain alive and functionating for about that time and so allow nature to accommodate itself to the changed conditions slowly instead of being forced to readjust itself precipitously. If, then, it is necessary for any reason to remove both ovaries in a young woman, and they are healthy as far as can be seen, there is a certain justification of grafting a portion of one ovary, preferably as near its original site as possible. To be sure, there will very likely be certain inconveniences and discomforts caused by the transplanted ovary, but their sum will generally amount to comparatively little as contrasted with the sum of the discomforts of a well marked case of premature menopause. Such discomforts will be those to be expected from the periodical swelling of an organ more or less confined, if the ovary is slipped under the sheath of the external oblique, for example. Then also such ovaries as they atrophy may cause trouble, as in my own case. Other bad results mentioned are dysmenorrhea (Morris, Martin), vesical troubles (Pankow), thrombophlebitis (Morris), results due partly to the seat of transplantation and partly to extrinsic causes. But as I say, the sum of such bad results seems small in comparison with the probable gain. Thus in 59 reported autografts, 15 cases may be said to have had permanent good health follow, *i.e.* normal menstruation kept up, while most of the failures did not impress me as being much worse than they would have anyway. Of 14 heterografts only four could be regarded as successful and that only questionably. It is sufficient only to mention some of the indications for which ovarian grafting has been tried, such as menorrhagia, amenorrhea, osteomalacia, sexual frigidity, nymphomania, and chlorosis. I have little sympathy with such operative experimentation.

There is, however, one indication for ovarian transplantation which seems to me thoroughly justifiable. I refer to operations done with the hope of pregnancy ensuing.

The problem presents itself under two aspects: Where a woman still has one or both ovaries left and it is a question of rendering it possible for ova to find their way into the uterine cavity, and where it is a question of transplanting an ovary from another woman. In this latter class the utility of heterografts is a questionable one. As Martin says, there is a very distinct antagonism of the blood and tissues of one individual to those of another, while there is practically no such antagonism between the blood and tissues of an individual to grafts from her own ovary. Results of heterografting are in the main very disappointing, even as regards menstruation, but Martin believes that they would be more satisfactory if the grafting were done sooner after the original loss of the ovaries, before the patient has lost the habit of menstruating, so to say. In one case of heterografting he had, however, menstruation start up and continue some months after a year's abeyance. The problem further arises in the very unlikely event of a living child being the result of a heterograft that there may be some difficulty in saying just whose child it is. This may be only an academic question, but that it is a real one was shown by a somewhat acrimonious discussion at the Edinboro Medical Society when such a case was reported. While the child would of course theoretically be the offspring of the donor of the ovary, I think most women would be content to feel that if they had given birth to it they were justified in regarding it as their child. Interesting questions of heredity naturally might arise. There have been reported three cases of living children born as the result of heterografting and three or four pregnancies resulting in miscarriages. Of course I admit that in these cases we must always face the suspicion that a tiny piece of the original ovary was left behind. Sauvé rather ungenerously remarks that pregnancies following heterografts should be viewed with suspicion as most of them come from the country, where in some thirty published cases pregnancy has followed "castration" without grafts. When, however, there has been a post-operative amenorrhea for a year or two, and then after a heterograft menstruation followed by conception has occurred the case seems proven.

A dozen or more cases of pregnancy following autografts, however, seem to justify the operation, in spite of most of them having miscarried. The problem may present itself in two ways. In the contingency of its being necessary to remove the ovaries in a case in which the tubes are patent it is a very simple thing to graft a portion of the ovary near the orifice of the tube or to do so in cases where it is necessary to amputate more or less of the tube. In cases, however, where the tube has been removed well into the uterine cornu the problem is a more complicated one and it is a case of this latter category that I shall report tonight.

I reported the following case briefly in this society some years ago, but have not published it. The procedure I followed was original as far as I then knew, as I had not heard of the somewhat similar operations by Frank in 1898 and Dudley in 1900.

F. D. was first seen April, 1904. She was a strong woman of 24. She had had both tubes and the left ovary removed by Dr. Beach three years previously for an acute gonorrheal salpingitis of a month's duration. A month later no gonococci were to be found and when I saw her she had been menstruating normally and was in perfect health, with no evidence of gonorrhea. Matrimony was now contemplated but it was contingent upon its being at least possible for her to become pregnant. She had, by the way, occasional slight pains in the region of the appendix and right ovary, which was fixed and prolapsed. Understanding fully the probability of nonsuccess she demanded an operation.

April 12, 1904, assisted by Dr. C. O. Kepler, I found the omentum and the intestines densely adherent to the old scar and bladder and fundus. In breaking them up the outer intestinal wall was injured in two places and overcast with catgut. The remaining right ovary was freed with much difficulty and proved to be a pretty poor one, being riddled with cysts, especially in its right half. The tubal stumps were about half an inch long. The right tubal stump was divided downwards until the uterine cavity was laid well open. The ovary was then bisected from above downwards, carrying the incision well down into the broad ligament, so that each half of the ovary retained at least some of its original blood supply. The cut surface of the distal half was then closed with catgut, leaving that half to function in case the other half died. The proximal segment of the ovary was then introduced into the cut in the uterine wall and lightly anchored in place with fine catgut, in such a way that most of its cortex projected into the uterine cavity. The uterine wall was then brought together over it and its pedicle, in which there was a fairly good sized artery, with deep and superficial layers of catgut. The pedicle was sufficiently long not to pull the fundus over to the right at all. A chronic appendix was then removed.

Six days later a pelvic abscess was drained by the vagina. A month after the operation she menstruated in perfect comfort, more so than for three years.

I saw her again in January, 1905. She had been menstruating regularly but for the last few months with increasing pain, and finding a mass to the right of the uterus I opened her again and removed a shell representing the degenerated remnants of the piece of ovary I left *in situ* and a peritoneal cyst the size of a child's fist. I examined the seat of the transplanted ovary with much care but could find nothing abnormal nor any trace of its pedicle, which may have been lost in the many adhesions present. At the same time a small ventral hernia was closed. She made a good recovery but did not menstruate for four months. She was then put on various emmenagogues and on May 25 flowed for one day. In June, July and August she flowed normally and evidently the transplanted ovary was working perfectly. She was unwell Aug. 1 and on Nov. 4 I received a letter from her attending physician from which I quote. "She now comes to me with symptoms of pregnancy and examination shows an enlargement of the uterus, bluish appearance of the cervix and labia. She has considerable nausea and has noticed an enlargement of the waist." A letter from the patient makes the diagnosis of pregnancy even more definite, so much so that one of the best obstetricians in America was engaged to attend at her confinement. My correspondent also speaks of a mass on the left side of the uterus "which worries him a little." "This mass is nodular with rather dense adhesions about it, yet it is not tender and she runs no temperature." This putative pregnancy was sixteen months after the transplantation. Everything went as should a normal pregnancy till Dec. 12, three and a half months after the last menstruation, when she passed with some hemorrhage a mass of detritus and the uterus rapidly decreased in size. In view of the physician's report and what took place it seems fair to regard this as the abortion of an early pregnancy, retained for some time after the death of the fœtus. In January she flowed and continued to do so but with increasing irregularity and nervous disturbances. About this time another surgeon removed some more peritoneal cysts, the mass to the left of the uterus my correspondent had spoken of.

Menstruation stopped entirely February, 1909 and I saw her in May. She was then the picture of health but a nervous wreck and her life a torment with hot flashes, eye ache and other symptoms of the premature menopause. She was now twenty-six. After she had been on corpora lutea for a time with little or no benefit, I advised a hysterectomy, in spite of her urging me strongly to transplant another portion of ovary from another woman, for she was by no means discouraged. Hysterectomy was done in February, 1911 in a western city and I understand she died thirty-six hours later of streptococcus infection.

If this case was pregnant as seems probable, and she had not aborted, the interesting question arises as to what would have been the course of labor. It would also seem to bring out that the tube plays merely an accidental part in conception if, as seems agreed, conception usually takes place in it. While the untoward final result in this case is to be deplored, I confess to a desire to further experimentation.

◆

A STUDY OF THE EPILEPSY OF DOSTOJEWSKY.*

By L. Pierce Clark, M.D., New York.

For some time past I have been interested in a study of the psychogenic factors of epilepsy. First I made an intensive research of the everyday personality of the epileptic before the convulsive part of his malady had developed. The material consisted of about twenty-five cases. carefully collected and controlled. As the result of that study I found there was a fairly definite type of makeup.[1] From the viewpoint of that study I undertook to analyze many of the individual cases still more in detail; I found that the essential defect in the epileptic makeup was in the affective sphere of the mind; there existed an emotional infantilism due to a defect in development of the psychosexual life. I was further able, by dream analysis and by close study of the minor, and in some instances of the major attacks, to detect an analogous striving of the unconscious in the fit not unlike that of the dream, the two states not only frequently corresponded in content but were often reciprocative. In other words, the epileptic attack was a libidinous satisfaction to the epileptic individual and the fit possessed a varied yet thinly disguised sexual content of the dream, only the former was much more intense and complete and therefore not so often recoverable in memory content after the attack had passed. It was not only a wish but a fulfillment. It was also found both in the dream and in the analyzable epileptic episodes (composed of psychic and minor fits mostly) that the libidinous strivings were simple and infantile. Viewed in this light the settings of the fit led one to believe the epileptic attack was an unconscious desire to return to the state of the libido comparable or identical with that of intra metroerotism. This and many other interesting facts were brought out. While the study was in progress it occurred to me to see how many great persons in history may have shown their disease in such a manner as to support this theory. Obviously many historical inaccuracies will creep in to the published accounts of such individuals, but inasmuch as many writers have made a precise and detailed analysis of such, the study will not be without interest.

I shall undertake to give a brief sketch of some of the salient points in the epilepsy of the late Russian novelist, Dostojewsky, who was long a sufferer from the malady. I have been obliged to depend largely upon translations made for me from the Russian literature and on the admirable essay of the subject by Segaloff, whose work appeared several years ago in Munich. Doubtless many have already read this work, but for those who have not, these notes may be of some interest. Segaloff's treatment of the subject is in many respects so excellent an illustration of my theory of the mechanism of epilepsy and its essential contentions of this malady that I shall offer no apologies for commenting upon it at this time. The main tenets of my thesis but briefly outlined in its main arguments and conclusions I here present as a sort of preface sketch to this dissertation.

Dostojewsky's romances abound in psychopathic characters. Russian alienists long marvelled at his expert knowledge of psychopathology, which he evidently obtained from self study. Even in early childhood he had hallucinations and it is generally known that he was epileptic.

Strakoff's recollections of him state that all which Dostojewsky wrote had been lived through by him with fervor and devotion. Dostojewsky was one of the most subjective of authors, whose novel characters were created from his own. His gloomy moods appeared in his works.

As a rule Dostojewsky had convulsions monthly, sometimes, however, twice a week. When he lived abroad, in a milder climate and was spared from sources of excitement, his attacks were much less frequent—up to intervals of four months intervened. There were always prodromal feelings before attacks although at times even he was deceived. Strakoff was present at an attack in 1865. The novelist visited him toward 11 p. m. and a lively conversation was soon in progress. The subject is not recalled, but it was an abstract one and weighty. Dostojewsky became enthusiastic and paced the floor. In enraptured tones he spoke of things sublime. As Strakoff made a remark of approval, the novelist turned his inspired face full upon him, and his exalted excitement was readily seen. Dostojewsky paused for a moment as if in search of a word, with open mouth, but no utterance followed. Strakoff felt that something was about to happen. Suddenly from his open mouth came a peculiar, prolonged and meaningless cry and Dostojewsky fell senseless to the floor. The attack was not a violent one but he had convulsions and foamed at the mouth.

Dostojewsky told Strakoff that he always had a feeling of ecstasy before these attacks. His sensations of happiness were so intense that no normal mind could experience them. He said his feelings were in complete harmony with the world, and for a few seconds of them one would give ten years of his life. The attacks sometimes caused slight injuries, and the convulsions were followed by muscular pains. There was often a temporary failure of memory and for two or three days he felt quite prostrated, and very melancholy. He was possessed by a certain anguish and irritability which could hardly be mastered. He felt himself a criminal guilty of some offense unknown to him. One of his characters in "The Karamasoff Brothers" suffers in the same way and for the same reason. Milukoff, another who knew him, speaks of certain alleged peculiarities of Dostojewsky, such as avoiding acquaintances on the street, refusing to acknowledge greetings in society (he even would ask, "who is that man," when greeted by some friend). Milukoff admits that such things may have occurred, but is certain that if Dostojewsky behaved in that manner it was after an attack. Dostojewsky had once taken tea at Milukoff's house, and just as a glass was handed to him he turned pale, began to totter and as soon as he was led to a sofa he had a fit. Fifteen minutes later he asked what had befallen him. When told he should stay all night he refused decidedly, saying he must go home, but couldn't or wouldn't give a reason for going. He even refused a carriage to the station, saying he needed the walk. His host nevertheless went along. As they were passing through a park Dostojewsky came to a halt and whispered that he felt an attack coming on. He was led to a bench but no attack appeared. There were two similar false alarms before Dostojewsky reached the station where a relative was found who took the train with him. Next day Milukoff visited Dostojewsky at his home. The latter was very weak and did not at first recognize Milukoff.

---

* Read in abstract before New York Neurological Society, Dec. 1, 1914.

[1] A Personality Study of the Epileptic Constitution, Amer. Jour. Med. Sci., Nov., 1914, No. 5.

It appears from Solowjew that Dostojewsky had his first attack while in exile and was never afterwards free. He remembered down to the finest details everything which happened to him before the disease appeared,—every event in his life, every face, everything which he had ever read or heard. But of that which happened after the first attack, much has been forgotten. He often completely forgot those who had been well known to him. He even forgot much that he himself wrote. In writing his romance, "The Devil," the contents of the book were forgotten and he often had to reread the preceding chapters before he could go ahead with the story.

Solowjew states that after a crisis Dostojewsky was often insufferable. His nervous state was so marked that he was quite irresponsible. He often came in the room like a black cloud, forgot to greet people and sought opportunities to quarrel. It appeared to Dostojewsky that everything which was said to him was vexing, insulting, or it was done to excite him. The conversation had to be brought to his pet subjects about which Dostojewsky would then become enthused. After an hour of such gentle treatment Dostojewsky would be in the best humor. Only his pallor, brilliant eyes and heavy breathing showed that he was mentally disturbed. Such changes of mood are often found in Dostojewsky's books

In the youthful recollections of Sonia Kowalewsky she says that she and her sister knew of Dostojewsky's disease, but never dared to speak to him of it. He himself once introduced the subject and told how the first attack came about. It was something as follows: While in exile he had been punished in the house of correction. He was isolated from his fellow beings and could exchange ideas with no rational person. Suddenly an old friend visited him, on an Easter night. Forgetting the sacredness of the occasion, both began to converse on literature, art, philosophy and religion, during which hours passed. The friend was an atheist while Dostojewsky was a believer in Christ and immortality, and an argument started. Dostojewsky became greatly excited. It was now early morning and the bells began to call the faithful to arise. Dostojewsky felt a sense of ecstasy, thought he was in Paradise (as was also Mohammed, another epileptic). During this ecstasy the first attack appeared.

While he spoke thus to the sisters, his mouth failed to articulate, his facial muscles twitched, he evidently saw the fear and anxiety in the girls' faces, they feared that an attack was due. He smiled and told them not to be afraid as he always knew when an attack was pending. However, he told them later that he had had an attack at the time.

From the preceding testimony there can be no doubt that Dostojewsky had epileptic attacks. In the first attack the sound of church bells was an auditory aura. Dostojewsky admitted afterward that no bells really rang. The unspeakably ecstatic feeling was associated with nearness to Heaven or Paradise.

For two or three days after the attack Dostojewsky was in the twilight state. The morose nature and great irritability showed the extraordinary action of the disease upon him. He wrote "The Devil" when his disease was beginning to tell on him, as was plainly evident in the character of the book. The circumstantial, detailed treatment is characteristic of the epileptic activity, and as a result the work lacks in cohesiveness. Malice and intolerance are also shown to a remarkable degree.

The preceding covers the period of 1860 to 1880. It should be added that Dostojewsky had a mania for roulette. In 1863 he started on a tour but lost all his money in this way, and this happened more than once. During this period the attacks were unusually frequent, and he was doubtless insane as a result. He had a fixed belief that he would win and once was 4,000 francs ahead and not playing. His wife begged him to be satisfied, but as he had sometimes been 30,000 francs ahead while playing, this was impossible. He lost everything, even his own and his wife's personal belongings. How infantile, foolish or defective this may have been I shall leave others to judge. The indictment is only so strong as one is inclined to personally make it.

As far as known Dostojewsky was very temperate in both eating and drinking. He was fond of sweets, was a heavy smoker and consumed much tea and coffee. But little is known of any affairs with women. As already stated, he was married. He was born in Moscow in 1823 and was the son of a physician. Their circumstances in life were moderate and Dostojewsky led a life confined in small compass. Not much is known of his childhood. The mother was sickly and died of consumption in 1836, so young that Dostojewsky was raised partly by nurses who told him gruesome stories. He was very impressionable and imitative, and was on the lookout for the novel. The father under took the boy's education. He was a stern man, a military physician, and was a stickler for discipline.

In 1831 the boy moved to the country and there plunged into rural life, developing a love for nature, and became absorbed in folklore from peasants. He was much given to revery. As a reader he was precocious and he limited himself to literature proper. He was a great admirer of Pushkin, whose death in a duel occurred near that of his mother's. These deaths gave him a great shock. It is authentically reported that he lost his voice, probably a psychogenic episode.

In 1837, when Dostojewsky was nearly fifteen, he entered the School of Engineering at Petersburg and remained four years there, but found the discipline very severe. He developed tuberculous symptoms which would seem to have been little more than scrofulous glands. His cough may have been due to excessive smoking. He remained an engineer only until 1844, when he at once devoted himself to his first novel, "Poor Folks." Soon afterwards he became a member of a literaray coterie to which belonged Tolstoi and other to-be-famous men. His novels were very successful and he was a prolific writer.

Long before his first epileptic attack he was the victim of so-called neurasthenia or some hypochondria. An alarming symptom was a lethargic sleep. A state of depression coupled with anxiety about the future troubled him. At times he lived in a dream for long periods. Yet in 1849, when he had trouble with the Government, all his mental symptoms left him and he began to show admirable qualities; he exhibited patience, tranquillity, etc. He believed that his arrest saved his reason. Evidently his numerous nervous and mental symptoms were all psychogenic. His lethargic sleeps, however suggest that he was already on the way to an epileptic career. One medical man who treated him before his exile pronounced him of the epileptic temperament, and said that some of his disturbed episodes were so severe that his mental integrity was threatened.

In Dostojewsky's works we find no less than five types of epileptics. In "The Landlady," written in 1874, before he had developed his full talent, is a character named Murin, an old man, in whom we see the "epileptic character" without any effort. He has the moods of Dostojewsky when the latter was young. The attacks described, however, are crude, as any layman might view them. The influence of alcohol on epilepsy is shown, Murin has a seizure after drinking a glass of wine.

The second type is represented by "Nelly" in a work written in 1861 after Dostojewsky had been banished and had had time to study his own case. The influence of heredity is shown in this work. The grandfather (maternal?) was "odd." The mother was exalted, readily excited and inclined to reveries. Her stubbornness in holding certain ethical views was readily mistaken for a strong will. The child's life was miserable and became worse after the mother's death. She was of pronounced epileptic character. Her attacks are described as follows: "After a prolonged stare (at some person) she gave a fearful cry, her face was distorted, and she fell to the floor. After the convulsions she looked fixedly at the same person as if trying to collect her thoughts. At last her face lighted up as she began to comprehend. For a long time she could not collect her thoughts and murmured meaningless words. For a long time she did not fully regain her senses. Reality was much mixed with fancies, and it seemed that something fearful excited her soul. Finally she fell into a deep sleep. She was pale and her lips were still bleeding. Her face, despite the sleep, showed great fear and a painful longing. Once when Nelly was requested by the physician to take medicine, she spat it out three times in succession in his face. Astonished at his good nature she began to sob in despair." In this work we see excitability, moodiness, sensitiveness, suspicion, want of psychic balance and endless oscillation between exaltation and apathy.

The third type is seen in "The Idiot" (1868). The boy had had attacks since earliest childhood Sent to Switzerland for treatment he improved so much under expert care that he figures in the story as a well developed human being. His appearance betrayed nothing. His eyes were large and blue with a leaden color of the iris and a fixed look which to some suggested epilepsy. There was in him something silent and melancholy. Describing his attacks in childhood he said that after a series of violent seizures he was left apathetic, without recollection. His brain worked, but not logically. He could not connect more than two or three ideas. As the attacks became weaker, his condition improved correspondingly. An inexpressible longing possessed him. Often he wished to weep. He marvelled at everything, was excited over everything. It depressed him very much because all about him was strange. This epileptic, the Count Mischkin, is a good man, and has fine feelings. Abnormal only is his naiveté, which often borders on stupidity. His will is weak, so that it lends him something boyish and immature. Like Dostojewsky himself, he writes a beautiful hand.

Associated with Mischkin are accounts of the twilight state which are of great value to the psychiatrist; also the feelings and thoughts of an epileptic in his "sound" movements; thus, to quote Dostojewsky's text, "At times he looked about him with great curiosity, but most frequently was quite indifferent, not even knowing where he himself was going. He lived in painful excitement and restlessness, wishing to be alone, yet finding solitude unbearable. Presently he finds himself occupied with something, a former employment. He has been so occupied for a long time but has not known it. He begins to seek something but at once forgets it. After half an hour he resumes the search restlessly. He knew that before his attacks he is distracted, often confusing objects and faces and requiring all his efforts to prevent blunders. It was necessary to give his full attention for a long time to everything he saw. In his epileptic states there would suddenly be a clearing up of consciousness, when his mind would glow and all his old powers return. The sensation of living, of self consciousness, would be accentuated tenfold. These periods, however, lasted but an instant. During their existence all excitement, doubt, restlessness vanished suddenly, replaced by full harmony, joy and hope. These bright moments, however, really presaged convulsive attacks and therefore were unendurable. He looked back on them, however, as glimpses of a higher existence but nevertheless pathological. This was the paradox of his disease. There could be no doubt of the beauty of these moments. They were not like the sensations due to alcohol or opium. One such experience compensated for all the evil of the disease and was worth a whole lifetime. In such moments he felt that some day time would cease to exist." Thus one catches a flavor also of Dostojewsky's style of treatment of his characters. Continuing one reads, "No doubt Mohammed's religious faith was based on these experiences, thought Mischkin. He had similar moments. The soul was flooded with a wonderful inner light. Yet the time required was but half a second! This moment passed at once into the cry of an epileptic seizure. Everything human has vanished for the time. The voice which is heard is not human. In one attack Mischkin falls down a stone stairway. Once when in company Mischkin was excitedly discussing a subject. Gradually a feeling of infinite happiness came over him. He ceased speaking save to answer questions and at last became completely silent. He sat quietly and listened, and seemed to sink in happiness. A sublime inspiration filled him more and more, and he was ready at any moment to 'burst into flame.' Then he began to declaim with passion, strove for breath, was as if suffocated with the excess of goodness in his heart. He ceased to breathe, became pale, seated himself and began to look about, regardless, with flaming eyes. His word storm, in which one thought followed so quickly upon another, forboded some danger, and in fact he shattered a vase. When this was past he felt himself struck to the heart, filled with mystic horror. Another instant and this gave way to a feeling of light, joy and inspiration. Then he began to breathe again, taking deep breaths. The expected severe attack had not taken place. For a long time he remained confused. He beheld and understood what was going on but seemed to himself to be only an unseen onlooker, taking no part in anything. Then once more he began to declaim. He spoke with increasing inspiration, saying things he did not intend. Another period of full ecstasy followed and then the attack came. After a series of strong psychic disturbances, minor attacks and psychic episodes his reason began to darken." At the end of the story we find him in a Swiss institute hopelessly demented.

The fourth type of epileptic is Kiriloff in "The Devil" (1871-2). To quote text from Dostojewsky's novel, "Externally he presented nothing singular but his speech is striking. He speaks in monosyllables or broken sentences and one notices at once that his thinking is difficult. His ideas are associated in the strangest fashion. His contemplations are religious-mystic, which are rooted in his illusions and hallucinations. He has no convulsions but psychic equivalents. He says of these, 'For seconds, not over five or six in all, in which there is a sudden feeling of infinite harmony which fills the whole of existence.' This feeling is not earthly nor is it necessarily heavenly. But an earthly being cannot tolerate it, and must be physically transformed or perish. It is as if one suddenly felt within him the whole of Nature and said, 'Yes, this is Truth.' So the Creator might have spoken as he finished the world. Here is no commotion, only simple joy. The feeling is not only that, but something higher. Terrible it is that these feelings are so clear, this joy so powerful. If this mood should last over five seconds the soul could not endure it and must perish. During these few seconds one lives through an entire life. Of what need is posterity, when the entire goal of life has been attained." We find that Kiriloff has one or two of these experiences weekly, and they never usher in severe attacks. He was told that they would do so eventually. Mohammed flew through the entire heavens before the water could flow from a can. It required five seconds to empty the can, and for Mohammed to have an epileptic fit.

In "The Karamasoff Brothers" (1879-80) we find Smerdjakoff, a classical epileptic. His mother, an idiot, wandered about clad only in a chemise. His father was a debauche. The boy was born in a truck garden and he was raised by the brothers. At 21 he was shy and silent. He was, however, high spirited and apparently despised all mankind. In his childhood he killed cats and buried them with pomp. Once when whipped he crawled into a corner where for a week he looked vexedly at all people. Once he took a box on the ear calmly but afterwards went into a corner as before. After a similar experience he had his first convulsion and they continued throughout his life, both mild and severe in type. In time he came to despise food. He would toy with a mouthful for a long time, finally deciding to eat it. After several years of instruction he changed greatly, aged rapidly, was pale and wrinkled and had the look of a eunuch. Visiting Moscow he took but little interest in it but learned to appreciate good clothes and clean linen. He became an excellent cook and his other interests were clothing, pomades, perfumery, etc. Men and women he despised alike.

Finally Smerdjakoff had a trick of gazing on the ground for some minutes. Walking along he would suddenly stop, lower his head and stare downward for ten minutes. Whether he simply stared or was fixed by something in his own mind puzzled those who saw him. Dostojewsky says in the text, "These people are not uncommon. It is probable that he was collecting certain impressions. As a result at some remote period an epileptic might begin a voyage, burn a house, etc." However, one of the brothers upon questioning him found always a deep pathological self love.

What are the special points brought out in this cursory study of Dostojewsky, especially in the light of our present day knowledge of epilepsy? First, that he had the infantile type of mentality. He reckoned or dated all things from his own inner consciousness. He was intensely egoistic, most of his reported conversations were but monologues on his part. Still earlier he was intensively devoted to his mother; had a psychogenic or hysteric episode after her death; had an intense antagonism to his father who was a stern disciplinarian and from whom he revolted to his tutors who fed him upon the gruesome tales his fancy craved. He could not take on or submit to the onerous discipline in the engineering school and left it with a thorough distaste for it owing to the strictness of the discipline. He continued to develop his self-centered characteristics, failed to observe the conventions of society, did not recognize friends in these fits of abstraction. He inconvenienced his friends by requiring the household arrangements to be changed to suit his own convenience. He had childish tantrums and odd ways of defying the physician's prescriptions of foods. Quite some time before his epilepsy developed his personality underwent further changes, he had fits of depression and anxiety, lethargic sleep after which he seemed to strive to continue his life in a dream. He also had periods of extreme irritability, embittered himself with governmental authority and suffered in lonely exile. Here in the light of recent psychoanalytic research, one notes with interest that after a revolt against the government, which is unconsciously the adult father, Dostojewsky at once lost the neurasthenic and hypochondriacal symptoms and became patient, tranquil, etc. Dostojewsky himself believes his mental integrity was saved by this action on his part. To an intense egoistic nature who suffers intensely under the chafing restrictions of the paternal rule the revolt against such authority often permits a freer range of the libido and the repressive symptoms before such an act of revolt often disappear completely. One cannot, however, be quite clear how much of the suppression of the libido was relieved, as it seems Dostojewsky's epilepsy also showed about this time, although in a somewhat masked form. He was definitely epileptic soon after he took up his life in exile, perhaps the attacks carried off much of the pent up repression of the libido as has been noted in many another epileptic. Often migraine attacks, lethargies and abstractions are to be found in the preconvulsive stage of an after frankly diagnosable epileptic.

The account of the first genuine attack, much of which was to recur in subsequent seizures, is characteristic. One should note especially, after long confinement, the expansion of the ego, possibly the inflation of the infantile unconscious in the term of Hoch; the meeting with an old friend; the religious controversy; the insistence of Dostojewsky in establishing the orthodox tenets of a paradise in the hereafter; the aura, and the inflation of the unconscious at the beginning of an attack. Again the feeling of oneness with truth and the eternal verities of the universe in the attack, and then Dostojewsky was in ecstasy of a minor attack. The expansion of his ego at the beginning of an attack (the sense of *allmacht*) the oneness with the peace, security and safety of paradise itself, strongly suggest the unconscious strivings to revive the infantile memories of the mother life and its paradoxal qualities. Regarding the latter, I hope at another time soon to dilate with greater emphasis in a comparative study of the epilepsies of St. Paul, Plutarch, Mother Ann Lee, Mohammed and even Joseph Smith, the latter of whom, as is not frequently known, died epileptic. In time it will probably seem less strange that much of our religious conception of Heaven which has been fashioned by epileptics out of their unconscious conceptions of the mother life should be so satisfying to the entire human family.

All of the outcroppings of Dostojewsky's egoistic and infantile feelings and ideas in the minor attacks and in the beginnings of the major attacks are over and over again elaborated in Dostojewsky's novels as we have seen. Lest too much stress be placed upon the epileptic's own responsibility and his shortcomings for his disease Dostojewsky now and then accounts for the epilepsy in many of his novel characters by family heredity from which his creations sprang.

We see in Dostojewsky's personality the disorganization of the mind, the replacement of bad judgment, faulty memory and childish reversions in character as the result of indulgences in his disease. The same is also portrayed in all his novel characters. Dostojewsky also mentions how his characters all mend when the individuals grow better of their disease. Yet the persistence of the naiveté, the weak and vacillating will, the boyishness and immaturity of Count Mischkin's mind under a partial restoration from his disease shows Dostojewsky's unconscious but deep appreciation of the infantile make-up of the epileptic constitution and probably of his own character as well.

Finally, it is interesting to note the probable unconscious workings in Dostojewsky's mind when he wrote "The Devil;" no psychoanalyst needs to be told that the devil is the father symbol in a derogatory sense. Dostojewsky often forgot the thread of the narrative in this story and had to reread much of the manuscript to finish the succeeding chapters. In it all lies a virile hate which Dostojewsky cannot repress or seems to make little effort to do so. It even goes far to mar an otherwise admirable piece of writing. The malice, hatred and intolerance shown in this novel is much more than the situation would ordinarily seem to demand. Dostojewsky told one friend that he so hated the book and its subject he could never reread it once it had been written.

OCCUPATIONAL DISEASE AND THE PUBLIC HEALTH.[*]

By Donald B. Armstrong, M.D., New York,

Director of the Department of Social Welfare, New York Association for Improving the Condition of the Poor.

Rhode Island in population and area is a small state, but the things she does are done in a big way. According to the 1910 census the state ranked fourteenth in the amount of its products turned out, this value totaling $280,344,000. In the 1951 manufacturing establishments in the state there were in 1910, 114,000 wage earners, 46,000 of which were centered in Providence. From these figures one conclusion certainly is inevitable, and that is, that there is here a very evident necessity for control over the industrial welfare of the workers of the state. Nothing is more important to the public health than the conditions under which the average man earns his daily bread. It is in this field that conditions of good or evil have the most far-reaching influence upon the morbidity and mortality rates of the state and upon the health and welfare of the state's citizens.

From the point of view of responsibility another important factor is disclosed by the 1910 statistics,—a factor which may have been somewhat modified by the new State Labor Laws of 1912-13,—and that is the unusually large number of the especially susceptible women and children that is employed in the industries of Rhode Island. Of the total industrial population over 16 years of age, 36,000, or 32%, were women—the highest percentage in the United States. There were in that year 5,000 children under 16 years of age working in Rhode Island, 4% of the total industrial army,—the largest percentage in the United States with the exception of the child-labor cursed Southern states of North and South Carolina and Georgia. Unable to protect themselves, especially susceptible to many forms of industrial disease, this portion of the industrial workers makes a specially urgent appeal for protection to the conscience of the community.

It is not the purpose of this paper to discuss in particular Rhode Island conditions nor indeed to present in any detail the special features of occupational disease control. This is not an industrial hygiene conference and consequently for the most part the remarks shall be restricted to the more general features of the problem. It might be well, however, in so far as it is reasonable, to select our illustrations from the local field. Certain features of Rhode Island industry lend themselves most admirably to this treatment, as would be the case in any community.

As is universally known, the state (quoting again the 1910 census figures) was second to one other only in the manufacture of woolen and worsted goods and fifth in cotton textile manufacture. It is widely recognized that these industries offer especially difficult problems from the points of view of ventilation, dust control, etc., and in industrial hygiene are classified as dangerous trades, particularly because of the exposure to vegetable fibre and animal fibre dust. As might be expected, there results from this dust exposure an increased susceptibility of the pulmonary tissue to infection with a consequent increase in the morbidity and mortality rates from tuberculosis. It was found, for instance, in England and Wales in 1902, as reported by the Registrar General, that among males employed in cotton manufacture between the ages of 15 and 19, the death rate per hundred thousand from tuberculosis was 82 as compared with a rate of 54 for all occupied males of that same age period. The tuberculosis death rates for the woolen and worsted workers bore much the same relationship to the average, the rate per hundred thousand for woolen workers being 69 as compared with 54, the figures for all the workers in all industries. Undoubtedly the statistics for textile workers in this country, did we but have them, would illustrate fully as effectively the relation of this dusty trade to tuberculosis. It must be obvious that these conditions both at home and abroad cannot be remedied until certain specific preventive methods are universally applied. It is impossible to discuss in detail these corrective measures, but many of them are obvious, such as improved methods of ventilation, scientific dust removal, the wearing of respirators, the provision of eating and dressing rooms, general educational measures among employees by means of placards, leaflets, lectures, etc., a rigid and periodic medical examination, the discouraging of untimely female labor, the use of selected non-alcoholic labor, the development of intermittent labor with shorter hours and an attempt to retain regular employees, etc.

---

[*] Delivered at the Rhode Island Conference of Charities and Correction, Westerly, Rhode Island.

We are all aware that industrial disease is an important factor in the public health of any industrial community. Unfortunately, very few of our states have labor statistics sufficiently accurate to be used as a basis for determining the exact significance of this industrial disease factor. On the other hand, for the United States as a whole, based on extremely comprehensive German labor statistics, the American Association for Labor Legislation has estimated that by the 33,500,000 workers in the United States in 1910 there were lost because of sickness 284,000,000 days. It is estimated that the total financial loss in this year alone, including wages, loss to industry and medical cost, was $772,857,000. This is not only a tremendous loss in efficiency, a great economic waste and an extremely poor conservation of human resources, but it is placing an unnatural limitation upon the social and economic welfare of the most vital part of our national structure—the great mass of workers. It is estimated conservatively that at least one-third of this disability is easily preventable.

It must be remembered that the average man in the United States is an industrial worker having a family depending for its health, progress and happiness to a large extent upon the man's working conditions. It is easy, no doubt, for social workers to understand the inevitable social and economic reaction between the work and the home. It must be remembered also that in certain instances industrial disease itself manages to reach indirectly through the worker to the home and its members. Everyone is familiar with the symptomatic picture of lead poisoning—its anemia, discolored gums, paralysis, blindness and insanity. This may be the picture of the male lead worker poisoned with the metal. On the other hand there are many cases on record where the disease has been acquired by the wife even when her only contact with lead industry was through the washing of her husband's lead-impregnated clothes, a poisoning preventable by the provision of factory dressing rooms and insistence on a change of outer garments upon leaving the factory. This is a particularly distressing picture because of the fact that lead poisoning is an affection of even greater seriousness in women than in men for they may add to the usual run of symptoms a sad succession of stillbirths and abortions. Sir Thomas Oliver has said that it is practically impossible for a lead poisoned woman to give birth to a normal child.

It is impossible here to discuss in detail either the practical methods or the administrative principles of control. From a national and state point of view, however, it can be indicated in outline that the necessary controlling factors are somewhat as follows:

1. A thorough-going scientific labor law.
2. The coördination of authority.
3. Honest enforcement of the law including an adequate system of factory inspection.
4. Effective educational work.
5. An adequate system for the reporting of industrial disease.
6. A sickness and accident compensation system.

All Rhode Islanders are probably aware that one of the chief industries of their state is the dyeing of the textiles. As long ago as 1906 there were, according to the Rhode Island Commissioner of Industrial Statistics, 7,578 workers engaged in the dyeing trades. There is a particular poison associated with this industry as a result of the use of chrome dyes which, while not as serious as lead or phosporous poisoning, is ofttimes incapacitating and consequently the cause of economic loss. The skin ulcers or chrome holes, as they are called, and the nasal septum perforations, are, on the other hand, easily prevented with the use of gloves and respirators. Another example of specific industrial danger to be found in the state is the manufacture of felt for felt hats where, in the impregnation of the hides with mercury, a dangerous poison is introduced into the felt and hat trades. The dust and fumes arising, if inhaled, absorbed or ingested, excite a frequent picture of mouth ulcers, insomnia, tremors, and sometimes fatal exhaustion, all of which can be prevented by dust removal, the use of gloves, mouth washes and tooth brushes and frequent dental and medical inspection.

Although there are many specific poisons occurring in industry, lead poisoning occurring itself in over 150 trades, nevertheless the great mass of workers are not subject to any special affection. From this point of view there would seem to be little foundation for the recent statement that under present social and economic conditions all industry is a disease. On the other hand, far outweighing the sequelae of specific toxemias are the more general evil results of unhygienic factory conditions and unwise labor stress such as the multiform neuroses and the cardiac and tubercular affections. We have touched briefly on the relationship of tuberculosis to the textile industry. A similar relationship is found wherever workers are employed under unhygienic and insanitary conditions for long periods.

As you probably know, Rhode Island leads the country in the manufacture of jewelry. In a statistical study conducted by Dr. Frederick L. Hoffman in 1908, it was found that in the jewelry industry in the age period from 25 to 54, 59.5% of all workers dying, succumbed to tuberculosis, whereas the rate for the same age period for all industrial workers at that time was only 31.3%. Another Rhode Island industry is pearl and bone button making and it was found by Dr. Hoffman that for the workers in this industry for the age period 15 to 24, the percentage dying of tuberculosis was 50 as compared with a general rate for all the United States industrial workers of 27.8%.

Tuberculosis in industry is, of course, associated particularly with the dusty trades, and considering the various types of dusts that occur in industry such as the metallic, the mineral, the municipal, the vegetable and the animal, it is estimated that there are probably 800,000 workers engaged in dusty trades in the United States. In many factories and shops, moreover, we must add to the trade wastes the bad physiological and psychological effects of over-heating, the contamination from overcrowded workers and often excessive moisture.

We have not touched upon the degenerative affections and accidents consequent to the stress and strain of such an industry as that of iron and steel production. We have said nothing of the great field of industrial accidents and we must now ignore these industrial factors to consider for a minute what might be said to be, in roughest outline, the most urgent necessities of this state in the field of industrial welfare. There has not been time to make a careful study of local demands and consequently, to the knowledge of many present the following may be exceedingly incomplete.

In fifteen or more states there is a law relative to the reporting of occupational diseases. This law usually requires that the physician attending the case report to the proper authorities, either the Labor Commissioner or the Department of Health. A penalty of from $10 to $200 is affixed for failing to comply with the law. Now, two years ago such a bill was introduced in Rhode Island but after a hearing, was never reported. Of course Rhode Island ought to have such a law.

Most of you have heard of the disease known as the "bends" or caisson sickness, often associated with work under compressed air where proper precautions are not taken during the decompression process. The American Association for Labor Legislation has recently drafted a model bill on this subject and last year it was passed by the New Jersey legislature. This, or a similar enactment, is recommended by the Association for the state of Rhode Island. The Labor Legislation Association also intends to introduce in the Rhode Island legislature in January a sickness insurance bill which was drawn up by the Social Insurance Committee of this Association as a measure for use in the campaign for health conservation regarding sickness in industry, similar to the Safety First movement in accident prevention. Thus can the state aid in the extension of the compensation principle to occupational diseases as well as to industrial accidents.

Of course, the citizens of Rhode Island are interested in workingmen's compensation for employees of the Federal government. At the present time the Kern-McGillicuddy Bill, H. R. 15222, has been favorably reported by the Committee on Judiciary of the House of Representatives at Washington. This bill needs strong popular support and consequently letters and resolutions should be addressed to the Rhode Island representatives in Congress urging them to give their hearty support to this meritorious measure.

According to the December, 1913, Review of the American Association for Labor Legislation, "at least six branches of government are authorized or required to enforce labor legislation in this, the smallest state in the Union." This includes factory inspectors, the Bureau of Industrial Statistics, the Railroad Commission, the Inspector of Buildings, the school authorities and the police authorities and is sufficient evidence surely of the necessity for concentration and the coördination of control.

There is a great necessity here as elsewhere for constructive educational work in connection with the enforcement of sanitary and safety standards. This educational work should be carried on by the state, by the vocational training schools, by private philanthropic organizations, by labor unions and by employers.

There is needed here, as everywhere, the ability to make genuine value judgments in health matters. We spend money wisely for health when we attempt to control communicable diseases; we spend it foolishly when we attempt to make our health budget cover such non-health activities as plumbing inspection and nuisance abatement. From the point of view of health values industrial hygiene is of prime importance and we must realize that the health of the worker is essential if industrial evolution is not to be abortive.

There are many things of a more general, national or indeed international importance which must be taken into consideration especially by the creative, socially-minded individuals who are able to discern other than simply material values in industry and who are desirous of having palliation succeeded by prevention and cure in social reform. As a nation, we must realize in the first place the tremendous economic waste resulting from our national inability or disinclination to conserve the human resources in industry. Perhaps this will not be done until it is brought home to the industrial organizer that it actually pays to give at least as much attention to the human machine in industry as to the mechanical device. To quote a recent editorial in the *Journal of the American Medical Association.*

"Abbe (Zeiss Optical Works in Germany) kept a careful record for the years when the plant was operating on a nine-hour day. When the working day was reduced to eight hours the record showed the men earned over 3% more than during the previous years, the output of the works was increased 3% and the power plant was able to shut down an hour earlier, thus affecting a very material saving in the fundamental expense. The record was for 233 men of 31 years and many different occupations on a piece-work basis were represented in the shop.

"Both employers and employees need to be convinced of the evident fact that the healthy man is the most efficient and the cheapest employee and that any reasonable expense to maintain him in health is a profitable investment."

It should be realized that our industrial system involves not only a waste of money and men but also of energy and enthusiasm. The men in Rhode Island who are making pearl buttons and who have nothing but pearl buttons to look forward to for the rest of their life are employed at a deadly hope-killing occupation and are quite naturally not going to put into that occupation any more interest and energy than is necessary. Is there a remedy for this? It is difficult to tell—certainly none has ever been tried on a large scale at least. One has been suggested, however, by an English writer and somewhat worked out by him in his discussion of the alternation of employments. This involves a periodic and progressive shifting from trade to trade at least in allied industries and requires of course intelligent governmental supervision, so necessary from every point of view, rather than the haphazard anarchistic industrial control or lack of control of today. This thinker believes, and certainly our own experience would seem to confirm it, that most men will work at a high pitch at a new thing, especially if they have in view a better thing to follow. In this way society would obtain both quantitively and qualitatively a superior service from the individual, and as a result of the concentration would require less actual working time from the individual, thus allowing more time for the preliminary educational period, and because of increased earning capacity, a greater saving against the nonproductive old age.

Such a scheme would seem to be the only logical alternative to a further development of a more continuous specialization in industry, to a more fixed labor class and to the ultimate expression of the idea that man is first a worker and then a citizen as embodied in the pitiable program of "I. W. W. ism" in industry and syndicalism in politics.

It is inevitable that part of the labor of the world must always continue to be comparatively uncreative and unimaginative. However, the ultimate cessation of immigration, more immediate impending events in the industrial world, point the way to the time, not far distant, when there will be no army of men always content to do "the dirty work" of the world. There is also a time coming when the state shall recognize the right of all individuals to work and grow socially and spiritually as well as materially—a thing scarcely possible for a man who is to be concerned with continuous drudgery or with one minute industrial process all his life. Is there a remedy for this condition? That also is hard to tell, but there is a plan, outlined by William James, that calls for an industrial state in which no class shall toil unceasingly but, through a conscript labor army, everyone, man and woman, will have the preliminary years for education and development, will spend his allotted time doing the foundation work of the world under the direction of the state on a basis of service to all, and not for the financial gain of the few. All the big necessities of life such as transportation, mining, food distribution and production, etc., must come under government supervision. For the individual to work his allotted time in this great industrial army will be to perform a great and recognized service to the state. Thus will drudgery be regulated and rendered innocuous. Here will be at last a legitimate field for militarism.

This may be exceedingly fantastic. It is at least, far in the future. It is an attempt to answer the many questions that are being asked of organized society with ever increasing intensity. Is industry to be reorganized by the intelligent, coöperative, sympathetic effort of a society with an awakened social consciousness, or is it to be seized and wrecked by the maddened and exploited? Is the spirit of gain to be replaced by the spirit of service or by the spirit of revenge? Is class distinction to grow and class war to come, or are the classes themselves to be socialized into extinction? Shall it be the constructive evolutionary path or the destructive revolutionary one? Shall poverty be enlightened and destitution made impossible? Pretty far from occupational disease? Yes and no. Far from the palliative treatment of this social defect but very near perhaps to the heart of the cure of the great social maladjustments of which preventable disease in industry is a manifestation.

* * *

MODIFICATION OF TECHNIC FOR HARE-LIP OPERATION.

By W. E. Ladd, M.D., Boston.

Believing that perhaps there may be some surgeons besides myself who have had difficulties in performing hare-lip operations with uniformly gratifying results, I am offering a modification in the technic for their consideration.

The main principle of all hare-lip operations is the restoration of the normal line of the alveolar

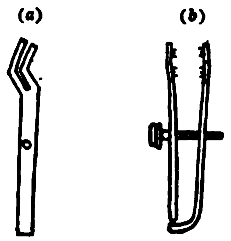


Fig. 1.
(a) Shows front view of clamp with slit for knife.
(b) Side view showing teeth, etc.

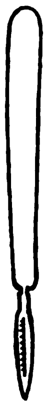


Fig. 2.

Fig. 3.

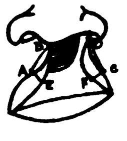


Fig. 4.

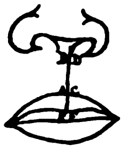


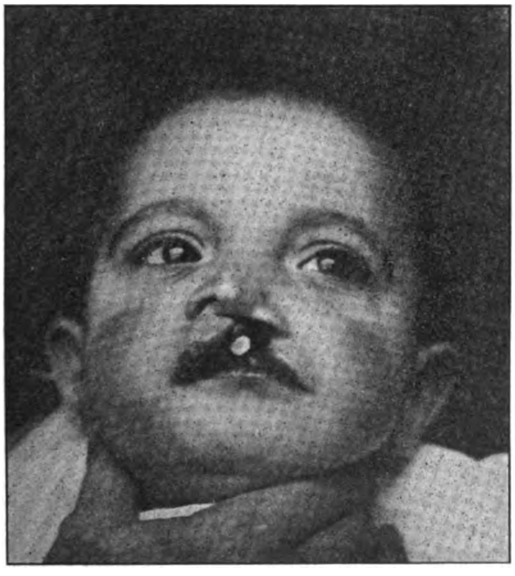
Fig. 5.

process as a preliminary procedure, followed by freshening of the edges of the fissure in the lip and sewing them together. In order to obtain a good looking lip with an inconspicuous scar it is absolutely essential to observe two rules: First the incision for freshening the edge of the fissure must be a clean cut made vertical to the plane of the lip; secondly, the incision on each side of the fissure must be of exactly the same length. Otherwise, accurate approximation is impossible and an unsightly irregular lip will result.

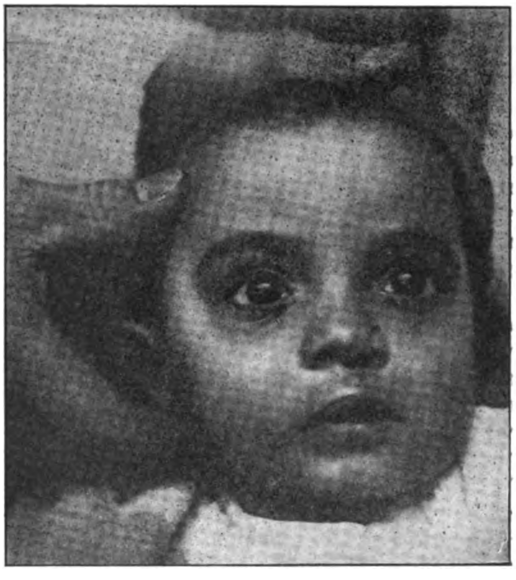
Some surgeons may be blessed with sufficiently accurate hand and eye to accomplish their result, "free hand," so to speak, but I believe there are many who will get better results by the use of instruments of precision.

The ones which I have devised and found useful are two pairs of clamps (see Fig. 1), made on a suitable angle with fine teeth to prevent the skin or mucous membrane from slipping, and a slit for the introduction of a small knife to make the incision. The knife used is made double-edged like a Catlin, only very small and thin (see Fig. 2). These instruments are used in conjunction with an ordinary small pair of sharp-pointed metal dividers. (See Fig. 3.)

The procedure of the operation is as follows: After the alveolar process has been restored in the usual manner, the desired height of the lip, minus the width of the vermillion border is determined with the dividers. This distance is then marked off on either side of the lip by pricking the lip with the sharp ends of the dividers at the points A and B and C and D (see Fig. 4) which are to form the lines of the incision. The lip and cheek are then freed from the alveolar process and superior maxilla on both sides until the fissure can be drawn together without tension. The clamps are then applied with the angles of the slits at the points A and C and the slits directed towards the points B and D. The knife is now introduced into the slit in the clamp and carried upward to the nose and downward through the border of the lip, making the incisions B A E and D C F (see Fig. 4). The



Hare lip before operation.



After operation.

clamps may now be removed and re-applied out towards the angle of the mouth to control hemorrhage.

The edges of the two incisions, which of necessity must be clean incisions of equal length and consequently fitting each other, can now be easily approximated, bringing the points B to D, A to C, and E to F (see Fig 5). This is done with one row of interrupted silk stitches, including all layers but the skin tied inside and another row of superficial approximation stitches of the same material, including the skin only, and tied outside.

This technic is applicable to all forms and varieties of single hare-lip, a fair example of which may be seen in the accompanying photographs before and after the operation.

Clinical Department.

PARTIAL TENOTOMIES BY THE TODD-HARMON METHOD.*

BY HOLBROOK LOWELL, M.D., BOSTON.

Assistant Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Assistant Surgeon, Boston City Hospital.

NOTE: Since this paper was written the writer has become convinced that this operation was performed by Dr. F. C. Todd some six years previous to Dr. Harmon's article. Therefore the title has been changed, thus giving Dr. Todd credit for the precedence and Dr. Harmon credit for once more calling it to our minds in a most concise manner.

EVER since the writer began the practice of ophthalmology he has been particularly interested in heterophoric cases. He has tried blurring in esophoria, and prisms and exercises in exophoria. Tenotomies, tuckings, and advancements have produced fair and indifferent results. There has always been a feeling that it was rather a gamble as to just what result would be obtained in these cases. Some form of graduated tenotomy has always seemed the least haphazard and the more scientific procedure, but none of the numerous methods advocated have created enthusiasm enough for the writer to try them.

In the *Ophthalmoscope* of January, 1913, Dr. N. Bishop Harmon of London, England, published an article entitled "Lengthening a Rectus Tendon in Squint Operations." The writer was so much pleased with the simplicity and ease of control in the operation described that he has since, with gratifying results, performed the operation four times on patients with phorias, who had marked general and locally distressing symptoms. The liberty is taken of quoting below a portion of Dr. Harmon's article, to refresh the reader's memory.

"The delicate methods of Stevens, Landolt, and Gromsdale require much patience, and then the result depends upon a frail suture. Verhoeff's partial plastic tenotomy is extraordinarily neat on paper, but is difficult to perform on the living subject, and I am not convinced that any real slacking of the tendon is secured. I evolved a method of three cuts which gave me all I wanted. It was so simple that it seemed that some one must have done it already, and in Casey A. Wood's new text-books of eye operations, I find nearly the same method figured, but if the author of the operation—Dr. Todd—will forgive me the criticism, it seems that he has just stopped short of doing what he sets out to do. The steps of the operation, and the effect, can be seen very well if it be practiced upon a piece of narrow adhesive strapping stretched between two fingers of an assistant. The tendon to be lengthened is exposed a short distance from the insertion. Supposing it to be an internal rectus, a small vertical buttonhole is cut parallel to the plica semilunaris and close to its edge. Tenon's capsule is cut and pushed back similarly, a squint-hook is passed beneath the tendon and slowly lifted, so as to draw the tendon into view, then two cuts are made in the same edge of the tendon, one on either side of the hook, as far as possible, so as to divide the tension at each cut up to the middle line of the tendon. Then the hook is pushed slightly to one side so the cut may be made from the opposite edge of the tendon, between the two cuts already made, and this cut is made from the edge right across the middle line of the tendon so as to sever two-thirds of its width. Immediately the third cut passes beyond the middle line, the tendon will be felt to give and it will yield distinctly as the cut is continued."

Discussions of this operation, and operations performed for the same purpose, elicited the opinion that the immediate result would be no more than ten degrees lessening of the phoria. In spite of the discouraging consensus of opinion, the operation was undertaken with some degree of confidence. In the following case the operation was done on the internal rectus of each eye.

CASE 1. Nov. 15, 1912, Mrs. H. W. F., myope, age 34, severe headaches for the past fifteen years. Examined repeatedly with and without a mydriatic. Complains of pain through right eye, with no full relief from pain at any time. Appendix has been removed, turbinates operated upon, and an Alexander done. Has been in a sanitarium for nervousness several times. She is often awakened in the morning by severe pain in head. Fundi normal, pupillary reaction good, cornea clear, tension normal; small opacity in posterior surface of lenses. V.O.D. 20/30+, V.O.S. 20/70+. Esophoria seventeen degrees at twenty feet, tested with twelve degree prism base down, on the right eye. Esophoria between twelve and fifteen degrees at twelve inches. Homatropine ordered for examination.

Nov. 16, 1912. Ordered correcting glass with a three degree prism base out, in either eye.

---

*Read at the nineteenth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, October 20, 1914.

Dec. 13, 1912. Above glass gave relief for four days, when same symptoms came back. Ordered:—

O. D.—.50 cyl. ax. 170 with 6 degree prism base out = 20/20.

O. S.—1. sph.—1.25 cyl. ax. 10 with 6 degree prism base out = 20/20.

Dec. 31, 1912. Last glasses do very well, though cannot read or sew, because she complains of seeing her nose. Esophoria seventeen degrees plus. Ordered +.75 added to her distance prescription with 6 degree prism base out, O.U.

Jan. 24, 1913. Old symptoms returned again Partial tenotomy advised on left internal rectus. The operation was done according to the Todd-Harmon method, described above, the middle cut being carried a little farther than two-thirds the width of the muscle, as the greatest possible lengthening was desired. Immediately after the operation, prism base down before the right eye showed an esophoria of two degrees.

Jan. 29, 1913. There are no headaches at all. Esophoria three degrees at twenty feet. No movement with cover test. Ordered distance glasses prescription without prisms.

Feb. 12, 1913. Patient had severe headache again, complains of "pulling" of the right eye from inner canthus. Esophoria six degrees at twenty feet. Patient insisted that operation be done on right eye because of the "pull." Right eye was operated upon without incident, but the middle cut was not carried over two-thirds the width of the muscle, as only a moderate shortening was desired. The eyes were not tested immediately after this operation because of the patient's nervous condition.

Feb. 22, 1913. Conjunctival stitches were removed; orthophoria at twenty feet.

March 6, 1913. Cover test shows no movement. Feeling as though eye were "held in a vise" no longer present. Eyes white and quiet. Esophoria without glasses 1½ degrees at twenty feet, with glasses 2½ degrees.

Sept. 24, 1913. No movement with cover test, 2½ degrees at twenty feet. Orthophoria, thirteen inches.

June 11, 1914. No movement with cover test, with and without glasses. Esophoria without glasses, at twenty feet, 2 to 2½ degrees, with glasses 3 degrees. Patient says that she is free from previous headaches and other distressing symptoms.

Case 2. July 24, 1912. Mrs. H. M. D., age 36, has had severe frontal headaches for past month; has been given glasses to rest eyes. V.O.D. 20/15—, V.O.S. 20/15—. Esophoria, twelve degree prism base down, twenty feet, fifteen degrees; at thirteen inches, nine degrees. Solution 1% homatropine ordered for examination. Ordered:—

O.U. +.37 sph. +.25 cyl. ax. 90 with 4 degree prism, base out.

Aug. 3, 1912. Complains of blurring with the new glasses but advised to continue using them.

Oct. 14, 1912. Esophoria has increased to twenty degrees at twenty feet. Ordered same prescription as above with 6 degree prism base out,

Nov. 7, 1912. Last glasses cause headache and general discomfort. It was decided to try a marked blurring glass with less prism. Ordered: +1.25 sph. +.25 cyl. ax. 90 with 4 degree prism base out O.U. Esophoria at twenty feet, twenty-six to twenty-eight degrees.

Nov. 19, 1912. Some trouble wearing glasses; advised to continue their use.

Jan. 28, 1913. Broke the last glasses.. Esophoria twenty feet, twenty-seven to twenty-eight degrees. Marked movement with cover test. Operation advised.

Feb. 9, 1913. Operated on left eye, doing partial tenotomy. Middle cut was made as long as possible. There was so much pain resulting from stitching up the conjunctiva that the immediate result of the operation could not be tested.

Feb. 11, 1913. Patient had pain for about four hours after operation, but slept well. No headache.

Feb. 14, 1913. Some discomfort because of stitches. Esophoria twelve degrees, twenty feet. To wear old glasses.

Nov. 6, 1913. Esophoria fifteen degrees twenty feet.

June 11, 1914. Esophoria at twenty feet, with twelve degree prism base down, ten degrees; with Maddox rod fourteen degrees. Marked movement, cover test. Patient says she will have her other eye operated on next fall.

Case 3. Apr. 7, 1913, Mr. W. F., age 62, marked diplopia. Cover test shows left eye turning up. Had considerable nausea, and much pain in back of his head, running down left side of his neck. V.O.D. 20/30, V.O.S. 20/20—. With +1. O.U. 20/15. Left hypertropia fifteen degrees. Operation advised.

Apr. 8, 1913. Partial tenotomy done according to the Todd-Harmon method on superior rectus, left eye. Orthophoria immediately after operation.

Apr. 21, 1913. Patient reports gastric symptoms have gone, and no longer diplopia, except when he looks very high up and to the right. Eight degrees left hyperphoria.

June 12, 1914. Four degrees left hyperphoria. Is not troubled by double vision, except when he looks up and to the right. Still some slight pain at times in left side of his neck. He has been so comfortable that it was necessary to write and ask him to report.

In summing up the foregoing results there are certain factors which should be taken into consideration. Patients with such marked phorias are of a highly strung, neurotic temperament, and it is a question whether this general condition is due to the phoria or vice versa. It is doubtful if it is ever possible to bring out all the latent phoria. However, the effort was made, in the first two cases, to bring out all the esophoria present.

In the first case the immediate post-operative result showed a correction of fully fifteen degrees. Eleven days after the first operation there were six degrees of esophoria and patient still had severe headaches. A few days after the second operation there were two and a half degrees of esophoria at twenty feet, that is, three and a half of the six remaining degrees had been corrected. In this second operation the middle cut was carried very slightly beyond the centre of the muscle. Fifteen months have elapsed since the last operation and three degrees of esophoria are present, the patient has freedom from the previous distressing symptoms, in spite of the fact that there has been much illness in the rest of her family.

In the second case the post-operative result showed a correction of fifteen degrees of esophoria, leaving twelve degrees uncorrected. The patient reports improvement in general condition and less nervousness, and wishes the other eye operated upon in the fall. There are still twelve to fourteen degrees of esophoria uncorrected.

In Case 3, the immediate result after operation was orthophoria. Fourteen months have elapsed since the operation, there are four degrees of hyperphoria present, showing an apparently permanent correction of eleven degrees. The patient has been comparatively comfortable.

Since this report was begun the writer has had occasion to operate on several strabismus cases. In two instances the external rectus was tucked, and the internal rectus was partially tenotomized according to Harmon's method. The procedure proved quite successful and gave a sense of security very foreign to that usually felt after a full tenotomy operation.

THE TREATMENT OF PNEUMONIA IN CHILDREN. REPORT OF 104 CONSECUTIVE CASES.

BY HAROLD W. DANA, M.D., BOSTON,

Assistant Physician at the Boston Dispensary; Second Assistant Visiting Physician at the Boston City Hospital.

THIS series of cases was treated by me during three years' service in Roxbury as district physician of the Boston Dispensary. There were 44 cases of lobar pneumonia and 60 cases of broncho pneumonia. Since I have not treated the two conditions as such differently from each other, the figures as to age periods include both types of the disease indiscriminately.

	NUMBER OF CASES.
Under one year	25
One year	21
Two years	15
Three years	12
Four to five years	14
Five to eight years	12
Eight to twelve years	5

Of the whole number treated, two cases died. One of these in addition to having pertussis as a complication, had taken almost no food in the week previous to beginning treatment. The other case, a feeble baby six weeks old, was not seen early in the disease. There was recovery in the other 102 cases. Many of these cases had pertussis or measles as complications to the pneumonia and in many cases treatment was not sought for until several days after the onset of the infection.

Home conditions were unfavorable in all of my cases in this series. The patients lived in a poor neighborhood, in tenement houses; often the parents were very ignorant and many of them were opposed to modern theories of ventilation. The fresh air cure is difficult to give anyway where a family of from four to eight people live in two or three rooms. There was little to do with, and of course since the nurses of the District Nursing Association could at the utmost make but two daily visits, my treatment was based on this amount of nursing. While, naturally, constant nursing care would be more desirable, certainly no nursing could have been more efficient, painstaking and enthusiastic than that which these patients in Roxbury received. In most cases we obtained the loyal coöperation of the mother and I feel certain that the care given by the nurse and by the mothers of the children produced the favorable results obtained.

The routine was as follows, in order of their importance:—

1. Fresh air constantly. Often, in winter, a child can be kept better covered and warmer if it be bundled fairly tightly into a baby carriage or a clothes basket, when it is to be put near an open window, than if kept in a bed.

2. Food. This is extremely important. If one is willing to take the necessary time and trouble, small amounts of liquids, or semi-solid food can be given to any child, and if repeated often, considerable nourishment can be given. Often the fact that a sick child does not wish food is considered by the mother as a sufficient reason for not giving the child any food.

3. Saline enemata. Long, slow, hot normal saline irrigations of the bowels once or twice a day are useful as a means of stimulation, to give water to the body, to reduce toxemia, and also for cleansing purposes. If necessary, calomel in divided doses was used for distention or constipation.

4. Cold applications to the chest. This was accomplished by wringing cloths out of cold water, applying them to the skin, covered over with newspaper to protect the clothes. These applications should be renewed when they become warm.

5. Bathing. These children received a tepid sponge bath, preferably followed by an alcohol rub, twice daily if the temperature reached 102.0° F.

6. Brandy. When the temperature is high or long continued I am personally in favor of large doses of brandy, perhaps 20 to 50 drops every two hours for a child one to three years old. The brandy is better not given with food as it may make the child vomit, or may make the food objectionable to the patient.

7. In one case in which I suspected a streptococcus septicemia, as a sequel to the pneumonia, antistreptococcus serum was given twice, apparently with brilliant results.

8. Drugs. As a routine all of these patients were given ammonium chloride and syrup of ipecac, using the fluid extract of glycyrrhiza as a

vehicle. For a child under a year I use a quarter to a half grain of ammonium chloride and a quarter to a half drop of the ipecac each two hours. For all children over a year I give a drop of ipecac for each year of the child's age each two hours, and a grain of ammonium chloride each two hours for a child from one year to twelve years old.

If the child is very sick, it is given tincture of belladonna, a quarter to a half drop up to eighteen months of age, and one to one and a half drops for older children each two hours.

A method I have found convenient for prescribing these drugs, is to add together the number of drops or grains of each ingredient desired in one dose, and then to order as many drachms of each to be put into the mixture as there were drops in each dose. For instance, for an eighteen months' old baby if I wish to give a grain of ammonium chloride, a drop of belladonna, a drop and a half of ipecac, using five or six drops of the vehicle, I write for the following mixture:

℞	Ammonii chloridi	ʒ1	(=gr. 1)
	Syrupi ipecacuanhae	ʒiss	(=Gtt iss)
	Tincturae belladonnae	ʒi	(=Gtt i)
	Extracti glycerrhizae fluidi	ʒvss	(=Gtt vss)
			(Total =8 drops)

M Sig. Give eight drops in a spoonful of boiled water every two hours.

As sheet anchors in case of need I use, first, tincture of digitalis, based on a minim and a half dose for each year of age each four hours when the heart action is weak and rapid; finally, as a last standby, I make a solution of strychnine sulphate and give large doses, one four-hundredth to one one-hundredth of a grain every four hours, stopping this drug after a day or so, or as soon as I can, to hold it in reserve for further need.

Medical Progress.

SEVENTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY.*

By Robert B. Osgood, M.D., Robert Soutter, M.D.,
Hermann Bucholz, M.D., Harry C. Low, M.D.,
Murray S. Danforth, M.D.,
Boston.

TUBERCULOSIS.

Tuberculous rheumatism still continues to be discussed and the French seem to have won a German convert. Nohl[1] believes that a chronic affection of the joints with a dragging course, a tendency to ankylosis, and a lack of response to the salicylates, should lead one to suspect tuberculosis as the cause. If, in addition, the general health is more affected than the condition of the joints seems to warrant, Nohl believes that we are safer in treating the case as one of tuberculosis.

Raw[2] reports several cases in which there was a polyarticular "tuberculous arthritis" in patients having other severe tuberculous affections, either glandular or general. On the other hand, there was no evidence of arthritis in 6000 cases of pulmonary disease.

[Ed. Note.—The evidence which Raw presents does not go far to prove the frequent occurrence of the rather mild "rhumatisme tuberculeuse" which Poncet has described.]

Menard[3] states his belief that the only efficient method of treating Pott's disease, both as regards cure and the prevention of deformity, is by recumbency. Menard's experience is perhaps as large as that of any orthopaedic surgeon, and he is not unfamiliar with the work of other men.

Packard,[4] after many years of work, has reached the same conclusion.

[Ed. Note.—We believe that greater effort should be made, even among the poorer classes, to carry this out in all severe cases. We still consider too early weight bearing unwise, even if ankylosing operations have been successfully performed, though they may well shorten the period of recumbency.]

We continue to see favorable reports of the treatment of osseous and joint tuberculosis by means of the Roentgen ray. Biteroff[5] has observed some thirty cases treated in Wilms' clinic in Heidelberg between October, 1911, and April, 1913. In twelve cases a later examination was made and in nine others reliable reports were received. Among the twenty-one cases there were four which he excluded because of tuberculous disease elsewhere, but among the seventeen remaining, twelve showed definite cure, two a probable cure, and three considerable improvement. The sinuses closed in all cases within a few months. He recommends the removal surgically of as much of the diseased tissue as possible and insists upon general treatment being carried on at the same time.

Scaduto[6] has observed five cases treated by this method, *i.e.* by post-operative Roentgen ray exposures every two weeks for many months. He considers the combination a great progress in the treatment of tuberculosis of the joints.

[Ed. Note.—The benefit of Roentgen ray therapy in tuberculosis of the joints would be more conclusively proven by these reports if general and surgical treatment had not gone hand in hand with the Roentgen ray therapy. We are inclined to believe, however, from personal ex perience that in certain cases, especially those with sinuses and mild secondary infection, this method should be tried with some measure of hopefulness. We must never forget, however, the danger from x-ray burns or its effects upon the deeper glandular structures.]

---

* This report is based on a review of 260 articles, etc., selected from about 500 titles having to do with Orthopaedic Surgery appearing in medical literature between December, 1913, and March, 1914. References are given to only such articles as have been chosen for report and comment.

Leuba,[7] evidently tremendously impressed with the cures in Rollier's clinic at Leysin of cases of tuberculous disease of the foot, many of them very advanced, declares that it is criminal to operate upon such cases. Many of these cases had been advised to have amputation performed and the photographs would seem to justify this advice according to the experience of the past.

[Ed. Note.—While the paper adds other evidence of the great value of heliotherapy as carried out at Leysin, there will remain many cases to be treated, which can neither go to Leysin nor remain inactive for the long period necessary to carry out the treatment by heliotherapy in any place. The results of tuberculosis of the foot and ankle as studied by Rogers[8] would seem to indicate that surgery under certain conditions is still the best method of treatment.]

Mau[9] has found in the blood of a large number of tuberculous patients and also of persons in health, acid-firm bacilli. He has not conclusively proved that these are tubercle bacilli, but believes them to be. He makes a plea for the consideration of tuberculosis in all its manifestations as a general disease and urges the continuation of general treatment for many years after the local lesion is apparently healed.

Küchenhoff[10] points out the fact that spinal anomalies may well prove a predisposing cause of pulmonary tuberculosis, especially to apical lesions, because in the "round shouldered" position with the curve of the upper spine forward, the apical space is narrowed.

[Ed. Note.—This observation is in keeping with statistics which show the common development of tuberculosis in persons whose chest expansion is slight and also in keeping with the fact that faulty posture and round shoulders are seen to be almost universal among those who make up the personnel of a tuberculosis clinic.]

Interesting inoculation tests have been made by Sforza and Cosco.[11] They have attempted to determine the extent to which muscle and bone marrow harbor the tubercle bacilli. They removed portions of muscle and bone marrow from tuberculous cadavera and injected them into guineapigs. In forty experiments they found practically no signs of infection when the pigs were inoculated with muscle tissue, but nearly all which had been inoculated with bone marrow died.

ARTHRITIS.

While acute articular rheumatism is considered a medical rather than an orthopaedic disease, the increasing tendency to seek at least the consultation of the orthopaedic surgeons in all chronic and some acute joint diseases makes any investigation as to the etiology of acute polyarthritis of obvious importance in any review on progress such as this. As is well known, Poynton and Paine many years ago believed they had isolated a specific streptococcus from joints of acute articular rheumatism. Phillip, Cole, Beattie, and others failed to cultivate any streptococcus, and Loeb was successful in only a few cases.

Rosenow's[12] experiments with his careful technic and detailed reports are of extraordinary interest. He seems to have isolated three types of organism from the joints of two cases, each of which types by special cultural methods may be converted into either one of the other two. Two of these, a streptococcus and a micrococcus, produced arthritis and pericarditis, but not myositis in rabbits and monkeys. They are all of low virulence and their affinity for joints and endocardium diminishes in cultivation. Grown with other bacteria and under low oxygen pressure, such as exists in the tonsils, sinuses, etc., they may acquire new features.

[Ed. Note.—Rosenow appears to be a veritable prestidigitateur and his successful transmutations are most astonishing. The confirmation of these observations will be of great importance. and in the meantime, as he suggests, we may well retain the term "streptococcus rheumaticus" until we can more carefully differentiate these varieties. The possible bearing of these experiments on vexed questions of the bacteriology of the different chronic non tubercular arthritides is evident.]

Barker[13], after an exhaustive study of the literature, finds that "the differentiation of the diseases included under the term chronic arthritis" is not so obscure a problem as he had expected. He recognizees along with others the almost impossibility, in the light of present meagre knowledge, of making a satisfactory etiological classification. There are too many missing links in the development of these diseases. Moreover the same late clinical picture may be present as the result of two very different original causes. An anatomical classification offers more hope and is more satisfactory than such terms as "static arthropathy" (Preiser) or "chronic irritative arthritis" (Hoffa and Wollenberg), but again our accurate anatomical and pathological knowledge is not at present accurate enough to make possible a satisfactory and inclusive classification on this basis. Barker recognizes the vitality and accuracy of certain descriptive terms and believes that much of the confusion which still exists is due to the attempt to make clinical and anatomical and etiological classifications coincide. As a working basis he suggests four divisions: I. Gout. II. Neuro Arthropathies. III. Primary Hypertrophic. IV. Secondary Chronic, including under this last heading Infectious Arthritis, as Luetic, Tuberculous, Gonorrhoic, Rheumatic (if it exists).

[Ed. Note.—It may not be amiss for the Editors to synonymize some of the various English and American attempts at classification under these headings.

I. *Gout.* This seems to retain its specificity in most classifications.

II. *Neuro Arthropathies.* Evidently here are included the tabetic joints, those occurring in syringomyelia, and possibly some of the types of atrophic arthritis (so-called by Goldthwait), which Osler and Painter and others have supposed to be possibly connected with a lesion of the central nervous system.

III. *Primary Hypertrophic.* This would obviously include the Hypertrophic type of Goldthwait and the Degenerative or Non-ankylosing type of Nicholas and Richardson, the Chronic rheumatoid type of Bannatyne, and the Osteoarthritic type of Llewellyn Jones. When speaking of Heberden's nodes, which belong under this heading, many writers use the term "Arthritis deformans." Strictly speaking this should be used as a general term for any deforming arthritis rather than as indicating any one type.

IV. *Secondary Chronic.* In this group should be included all those chronic joint conditions following special known etiologic agents, the great mass of which are either frankly infectious or at least toxic from some focus away from the joints. Here we should place probably some of the Atrophic and all of the Infectious types of Goldthwait, and the Acute and Subacute rheumatoid types of the English writers, and the Proliferative or Ankylosing types of Nichols and Richardson, although these authors believe that the causative agent is not an infection.

We have not mentioned in this attempt to synonymize the careful pathologic classification of Nathan, for while it is most helpful and valuable, it is less likely to be applicable clinically by the average practitioner. What we need at present more than anything else is the general recognition of such rudimentary facts as the very existence of specific types of chronic non tuberculous joint diseases, now far too widely classed as chronic rheumatism and treated by irrational medication and meagre success. When the profession at large comes to accept these facts, evident to all historical and clinical and pathological investigators, and learns to recognize the various types, calling them by what names they will, then we may expect less discouragment of therapy and a more rapid advance of knowledge which will some day lead to more accurate and generally acceptable classifications.]

The importance and possibility of this differential diagnosis of these types has been emphasized by Wollenberg[14] in a recent article, in which by pathological specimens and radiographs he shows the findings to be quite characteristic of gout (Type I, Barker), arthritis deformans (Type III, Barker), progressive polyarthritis and gonorrheal arthritis (Type IV, Barker).

In an article entitled, "General Pathological Considerations in Joint Affections," Delrez[15] has made some interesting observations regarding the joint fluid. If the cytological examination of this shows the polynuclear count low it argues in favor of a tubercular infection. Only the presence of bacteria themselves, and not the cell count, would determine whether the fluid were sterile or infected, since this cell count varies in both types at different times, now showing a preponderance of the polynuclear forms and now of lymphocytes. If the fluid withdrawn does not coagulate in thirty minutes it suggests complete recovery. When spontaneous coagulation occurs outside the joint this usually takes place in from ten to thirty minutes. Delrez has found, as have other observers, that the synovial fluid may be sterile but bacteria be found in the membrane. Analogous conditions are found in the pleural, pericardial, and peritoneal cavities. He states that Volkmann and König have shown that tuberculous arthritis is frequently caused by a neighboring bony focus and that J. Koch was able by injecting a streptococcus in the vein of a dog to produce an arthritis. The fluid withdrawn was sterile, but the streptococcus was found in the marrow, the epiphysis, and the periosteum. Delrez believes, however, that there are also articular infections primary in the synovial membrane, and quotes the experiments of Lannelongue and Archard on rabbits, proving absolutely in his opinion this independent origin of certain infections in the joint synovia with the bone uninolved.

Pemberton[16], using the term Rheumatoid arthritis in a somewhat indefinite and inclusive sense, has been studying its metabolism and attempting to discover methods of diet which will be preventive and successful in the treatment of chronic polyarthritis. We should say that most of his cases would come under the fourth type of Barker's classification above, that is, the Secondary Chronic Type, and would not include the third, or Primary Hypertrophic class. Pemberton points out that even the removal of the original cause may not be sufficient to put the disturbed metabolism in correct balance. He believes that the old ideas of faulty elimination of the bowels and kidneys and of intestinal putrefaction must not be too closely followed. His treatment is based on the regulation of the diet so that it shall first come within the limits of the disturbed faulty metabolism. That is, he begins frequently with a diet of low caloric value and with quite as much attention to the avoidance of too great quantities of carbohydrate food as of proteids. The diet is then increased very gradually. He has found this successful in markedly improving the condition in many reported cases.

[Ed. Note.—His articles are well worth careful study, not only because of the value of his research work, but because the emphasis is rightly laid upon careful individual attention to each case in the matter of diet. Little may be expected from any other type or dietetic treatment.

It may possibly be found as a result of the most suggestive studies of Traves[17] and Dreike[18], the later work of Bean[19] on the basis of the germ layers, and the still more recent articles of

Bryant[20] on personal records of over 200 autopsies, upon which we expect to comment more fully in a later Report of Progress, that we shall be able to lay down certain broad principles of diet, based on an ability to recognize certain broad general types of individuals and based also on the possible discovery that the different types are susceptible to distinct types of metabolic and joint disturbance. Thus many observers have recognized already the carnivorous and herbivorous types and the difficult intermediate class of human beings, the body form, the lengths of the different intestinal segments, etc., all conforming to a most constant degree. Already we are beginning to find clinically that one type does well on a largely meat diet, and badly on a largely vegetable, while another improves on vegetables and grows worse on meat. We would call the attention of those interested in this most suggestive, and we believe most helpful work, to Bryant's[21] Remarks and Bibliography on Stasis and Human Efficiency in the May, 1914, International Abstract of Surgery.]

Menzer[22] believes that all treatment of non-tuberculous joint diseases should proceed on the assumption that somewhere in the body is a focus of chronic infection. He considers that the commonest location of these central infections is in the upper air passages, the tonsils, the nasal sinuses, the bronchial lymph nodes, or the ear.

Ibrahim[23] is convinced that Still's disease is identical with chronic infectious polyarthritis of childhood and that the prognosis in all cases is by no means bad.

[Ed. Note.—We report these articles not as representing new conceptions but as adding the weight of further clinical observations to the infectious or toxic theory of much chronic non tuberculous joint disease. The acceptance of this theory will lead to the realization that as Menzer says, salicylic medication is not the proper treatment. It may relieve pain, but it does not combat the central primary cause, and interferes with the natural production of antibodies and the development of natural immunity.]

Tommasi,[24] interested in a statement of Prof. Pellizzari that gonorrheal arthritis occurred only in tuberculous subjects, studied all the cases of gonorrheal arthritis admitted to the clinic of the R. Instituto di Studi Superiori of Florence from November, 1911, to the date of his paper, comprising twelve cases. A positive diagnosis of tuberculosis was made when the von Pirquet reaction was positive. A positive diagnosis of gonorrheal arthritis was made when there was in addition to a characteristic arthritis a urethritis with a discharge containing gonococci. In every one of his twelve cases there was a positive von Pirquet reaction and nearly all were of a "build" suggesting susceptibility to tuberculosis. Some of the cases had evidently had previous tubercular infections. Tommasi believes that in a person infected with tuberculosis the tissues may be predisposed to gonorrheal infection, the protective reaction being weak to this special infection. He believes that the very fact that a person has a gonorrheal arthritis should lead one to suspect a latent tuberculosis and that treatment should be planned with this in mind.

Solis-Cohen[25] has called attention to a very obscure but, we believe, sometimes recognizable class of joint symptoms which he designates as angioneural arthroses (periarthroses, pararthroses). The etiology is obscure, and attacks come on and recovery occurs often unexpectedly and inexplicably. Practically nothing is known of the pathology, and the diagnosis may perhaps be said to be made largely by exclusion. The type of individual is usually neurotic and the exacerbations seem now to have one cause or set of causes and now another. He does not attempt to discuss the possible relation of any of the glands of internal secretion, but believes that supervision and regulation of the manner of living is of most importance.

Over treatment is, in the opinion of the editors, the greatest danger, considering our great lack of knowledge concerning both cause and effect.

PARALYSIS.

Cerebral-Spastic. Stoffel's[26] article on the treatment of spastic paralysis is an important one and we are beginning to receive reports, for the most part favorable, concerning the results of the operative treatment which he advises in certain cases. He believes, however, that early cases can be much benefited by non-operative treatment. He emphasizes the fact that there exists no complete paralysis of muscles in spastic paraplegia. The peripheral neuron being intact, the muscles are capable of contraction under electrical stimulation. He considers that there are two stages to the disease, first a more or less complete paresis and a diminution in muscle tone; second, a state of hypertonicity in those muscles whose origins or insertions are brought nearer together by the positions maintained in bed, and a hypotonicity in the overstretched groups. He believes that if contractures are not allowed to occur, the primary stage of paresis is curable and that the muscles can be re-educated into good function. In the cases such as are commonly seen in which contractures have already occurred, Stoffel believes that decreasing the energy of the spastic muscles and increasing that of the antagonist muscles is the principle of treatment to be followed. He considers that this can most perfectly be accomplished by an operation which he describes. With a knowledge of the internal anatomy of the nerve bundles within the sheath, he resects or divides some of the motor fibres going to the spastic muscles. By massage, exercises, and electricity he then strives to strengthen the weaker antagonists. He resorts in addition to tendon lengthening only when contracture is still present under the anaesthetic.

Hohmann[27] reports good results (number of cases not given) from this operation, but emphasizes the importance of long continued after treatment, and has noted the appearance of neuralgic pains in two of his cases one and two weeks respectively after the operation. He believes that the operation is indicated in cases of Little's disease, infantile cerebral hemiplegia, and spastic contractures in the hemiplegias of adults, but not indicated in those cases having choroeic movements, hydrocephalus, etc.

Bülow-Hansen[28] in Christiania reports his favorable experience with the operation in 22 cases, nine of Little's disease, eleven of spastic hemiplegia, one of spastic hemiplegia in an adult, and one a spastic torticollis.

Bundschuh[29] from the surgical clinic in Freiburg describes two cases of spastic equino varus and one of marked adductor contracture who were much benefited by the operation.

Kölliker[30] in Leipzig, on the other hand, believes from his experience that the operation is not as suitable as tenotomies in cases of Little's disease, but is useful in pronation and flexion spasms of the hand in cerebral hemiplegia.

A type of spastic paralysis occuring in certain cases of inherited syphilis, described by Marfan[31] should be mentioned, since it may well be confused with some of the other spastic paralyses. With treatment it is capable of cure, alleviation, or at least arrest, but without treatment is definitely progressive. Marfan has observed six cases, the paraplegia beginning between the ages of five and twelve. The gait at first is only a slight limp of the spastic type and may be more pronounced on one side. It is difficult for the child to flex the joints in walking, though the spastic rigidity largely disappears at first in sitting or reclining. The tendon reflexes are much exaggerated and Babinski's sign is present. In Marfan's cases the Wassermann was positive in several and in three there were signs of an interstitial keratitis. Salvarsan seemed effective in arresting the process in his first case (observed for over ten years) though mercury and iodide had failed. If treatment is begun early he believes the progress may be arrested and possibly a complete cure accomplished.

Poliomyelitis. Kling and Petterson[32] add confirmatory evidence to the experiments carried out at the Rockefeller Institute under the direction of Dr. Simon Flexner, with regard to finding of the virus of poliomyelitis in the washings from the nose and throat of healthy persons in the environment of a case of poliomyelitis. It would seem that whether or not the disease is transmissible by insect or animal carriers, the human naso-pharyngeal secretions should be most thoroughly destroyed in all cases of the disease, and perhaps as well the secretions of those in close contact with the sick.

Soutter[33] has devised an operation for the correction of the obstinate flexion contractures of the hip frequently observed in neglected cases of poliomyelitis. Its merits are its thoroughness, its simplicity, and its freedom from hemorrhage. A 6-8 cm. longitudinal incision downward from about 5 cm. posterior to the anterior superior spine is carried to the deep fascia, which is then incised in a transverse direction. With an osteotome or a sharp periosteal elevator the insertions of the tendons to the anterior superior spine and extending downwards along the pubic bone are scraped off and pushed downward with fingers and gauze. The bleeding is slight and the correction of the deformity easy.

[Ed. Note.—The editors have had most satisfactory results from this operation.]

Under the title of "A New Treatment of Poliomyelitis," Moulton[34] maintains that many cases of poliomyelitis may be prevented from permanent paralysis by energetic manipulative treatment of the spine. Quoting Osler he says that the paralysis is due not so much to the damage to ganglion cells themselves as to the effect of the inflammatory changes in the surrounding tissues. He believes that regeneration of the axis cylinder will take place if the nourishment can be restored. The inflammatory process has caused adhesions of fibrinous tissue which contract and constrict. By stretchings and swingings with the body suspended by the head or a waist belt he strives to break up these adhesions without injuring the nerve cells, bringing about at the same time an increased blood supply which aids absorption and stimulates vaso motor function.

[Ed. Note.—Moulton's reports of cases are vague, and while the possibilities of his treatment need not be denied, it is evidently unscientific and certainly in the early cases, we believe, dangerous. In our experience massage begun before the peripheral neuritis had subsided has aggravated the symptoms. With certain safeguards and with judgment its trial in cases beyond the acute stage would not seem likely to do harm, but would seem to differ little from the methods now employed by those well trained in physical therapy.]

(Concluded next week.)

Reports of Societies.

THE PHILADELPHIA COUNTY MEDICAL SOCITEY.

WEDNESDAY, NOVEMBER 11, 1914, AT 8.30 P. M.

The President, DR. WILLIAM DUFFIELD ROBINSON, in the chair.

DR. JOHN J. GILBRIDE reported a case of acute appendicitis with abscess formation in which the infecting organism was the colon bacillus, and in which the patient had a severe glycosuria. Recovery followed operation and drainage.

SYMPOSIUM: THE EYE, THE EAR, THE FAMILY DOCTOR.

DR. GEORGE E. DESCHWEINITZ read a paper entitled "Concerning the Commoner Diseases and Injuries of the Eye and Their Treatment."

DR. SAMUEL D. RISLEY: Under the light of modern research we have discovered that things apparently simple are complex. In no form of disease is this probably so much observed as in conjunctivitis. By the educated eye and with laboratory methods many essential differences are discovered not recognized by casual observation. We all must have been impressed with Dr. deSchweinitz's statement that to be an ophthalmic surgeon one must first of all be an educated doctor. With increased experience I am more impressed with the truth of what has been said tonight, that if tubercular infection of the eye does not stand first as an etiological factor in infections of the uveal tract and of the cornea it is very close to first in etiological importance. Again and again cases of headache have upon close study been traced to this infection.

DR. WILLIAM S. NEWCOMET: Reports come to us from outside the city of cataracts being cured by radium, but I cannot support any such form of treatment. We occasionally get good results with radium in the treatment of small epithelioma around the lids. In cases of true rodent ulcer, however, I believe we gain nothing, unless we cut wide of the mark and bring the tissues together by a plastic operation. In reported cases of cure there is failure to discriminate between the two conditions.

SOME CONSIDERATIONS OF THE NEWSPAPER ELEMENT IN PUBLIC MEDICAL INSTRUCTION.

DR. HIRAM WOODS, Baltimore: From the attempt of the medical profession in Baltimore to make use of the public press certain lessons have been gathered. Three phases of our relations with the daily press are: (1) Advertisement of patent medicines, various medical appliances, electrical treatment, opticians' cure of remote symptoms by glasses, etc.; (2) Descriptions of remarkable, or supposedly remarkable operations, details of illness of prominent persons, etc.; (3) Legitimate educational purposes. The first of these three, advertisement, has an influence upon the value of an educational article. Certain classes of people receive more lasting impressions from the claims of some medicine published on the first or last page than from a carefully prepared article stowed away in small type on the editorial sheet. Upon the second count we have found that men whose cases did not, and others whose cases did get into the papers, disapproved of the publication of unauthorized accounts of an illness or surgical operation. A committee was appointed from our profession to confer with the newspaper representatives. The report of our committee, however, failed of acceptance with two out of three newspapers mainly because editors did not wish to curtail their plans for running down a "story" in their own way. In our relation with the press, no one will question the value of the newspaper as a means of reaching the public, there can be no doubt of public interest in medical matters; and, I think we may also say that if we have advanced in preventive medicine, it is our duty to instruct the public in means of prevention. To make such instruction helpful, however, one must put himself in the place of the ignorant and the more or less sensation-loving portion of the public, those most in need of our instruction. For this work the help of the experienced reporter should be welcomed.

One point especially insisted upon by our Baltimore newspaper friends is that medical articles should be signed by a man known to understand his subject. Success in newspaper instruction must depend upon professional and journalistic coöperation. Possibly the solution lies in the medical society's assuming responsibility for the article, while giving the name of the author. Newspaper public instruction has more to it than furnishing anonymous articles and the background difficulties are the hardest to solve.

DR. A. B. HIRSH: That there should be united action on the part of the medical profession and of representative men of the press certainly appeals to those who have studied the efforts of our own County Medical Society's committees in what has been to us during the past year a relatively new field. Dr. Woods has our assurance that his suggestions have indeed fallen upon fertile ground.

THE RELATION OF THE TONSIL, ADENOID AND HEARING TO DEVELOPMENT IN CHILDREN.

DR. D. BRADEN KYLE: Tonsillar and adenoid tissues are physiological structures and their relation, as well as that of hearing, to the mental and physical development in children is of extreme importance. It is therefore apparent that the mechanical interferences with phonation, such as imbedded or enlarged tonsil, or the obstructive adenoid, should be corrected early in life before habits are fixed. Extreme care should be taken in correcting these defects that the muscular structure of the soft palate and pharyngeal pillars are in no way injured and thereby prevent the formation of scar tissue, which in turn would involve the mechanism of phonation later in life. It is extremely important for the parent, the physician and the teacher to take into consideration these mechanical defects, and watch the process of the child through the formative period of development. I do not wish to be understood as believing that all tonsils cause adverse conditions or that all tonsils should be removed, but I do wish to emphasize my conviction that adenoids and tonsils are in many instances the great enemies of perfect development of hearing and of speech. There are few children who suffer from impaired hearing who do not have this condition. There is no more fallacious and dangerous statement in the English language when applied to the ear, than that advice of letting the child alone to outgrow the cause, for we positively know that sooner or later it will be a menace, not only to his hearing but to his speech and general health. While the child's mentality may be normal more effort is required to attain development in the presence of obstructive adenoid structure than in its absence. In early childhood any obstruction to nasal breathing will affect the facial development and contour. This will affect the acoustics of the mouth and interfere with phonation and enunciation and alter the voice. The tonsil that is submerged is the one that nearly always is to blame for the infective processes in its region and in the neck and which proceed from the neck to the general system.

By careful attention to these conditions in childhood with removal of the causes the number of handicapped children will be materially lessened.

DISCUSSION.

DR. B. ALEXANDER RANDALL: I would express my almost complete agreement with all that Dr. Kyle has said. I will go a step further and state my conviction that obstructed nasal breathing is more often a cause of adenoid hypertrophy than a consequence. We must have a free nose if we are to have these conditions remain anywhere near the normal. Unilateral deafness is a very serious handicap to those who may have perfect hearing in the other ear. If all sounds are taken in from one ear there is not only a delay in comprehension, but an amount of actual confusion very little appreciated. Upon the anatomical side I feel strongly about the essential nature of a free nose. There are many instances in which the high vaulted palate with the narrow nasal chambers are in part hereditary. Children should be taught early to keep the nose free. By hot gargling much can be accomplished by a method so ridiculously simple that many will not use it. By keeping the parts in good working order in early life many of these disadvantages can be forestalled.

Dr. Francis R. Packard: In a discussion of the pathologic conditions of tonsils and adenoid vegetations in the nasopharynx as they bear on the development of the child, there should be a distinction drawn between the two conditions. In respect to the influence of adenoid vegetations, I think their presence is invariably harmful, especially (1) by their interference with respiration; (2) by the ear conditions, either suppurative or nonsuppurative to which they give rise; (3) as sources of infection by the presence in the adenoid of tubercle bacilli or other pathologic microörganisms. Meyer's classic report which appeared in English in the Transactions of the Medico-Chirurgical Society of London for 1868, dwelt especially on the ear troubles arising from them, nearly two-thirds of the 102 cases he had observed having aural disease as a result of the presence of vegetations. The tonsils although sometimes an etiological factor in ear troubles and quite often a source of respiratory disorders, are now chiefly regarded as productive of harm by acting as portals of infection or autotoxemia, especially in what are grouped as rheumatic affections of the muscles, joints or heart, and of those general, slow toxic infections of which, heretofore, the source has been regarded as obscure.

Book Reviews.

Chemistry and Toxicology for Nurses. By Philip Asher, Ph.G., M.D., Dean and Professor of Chemistry at the New Orleans College of Pharmacy. Philadelphia and London: W. B. Saunders Company. 1914.

This new volume in the publishers' series of text-books for nurses is intended as an elementary manual for probationers, and a reference work for graduates. After a preliminary consideration of nomenclature, the chemical substances used in medicine are described, with their medicinal properties, doses, and uses. The book is in three parts, dealing respectively with inorganic, organic, and physiologic chemistry. The toxicology of poisonous substances is considered in conjunction with each. There are three text-figures representative of apparatus. The book is concise, well arranged, and should prove of use and value to those for whom it is written.

A Medical Dictionary for Nurses. By Amy E. Pope. New York and London: G. P. Putnam's Sons. 1914.

This convenient new dictionary aims to provide the derivation, pronunciation, and detailed definition of medical words and terms of special importance to nurses. The dictionary, which occupies thirteen-fourteenths of the volume, is followed by supplementary tables of weights, measures, chemical symbols, abbreviations, elements, poisons, prefixes, suffixes, thermometric scales, and the average composition of common American food products. The book should prove of value to nurses and others in search of this type of information.

The Life and Letters of Nathan Smith, M.B., M.D. By Emily A. Smith. New Haven: Yale University Press. 1914.

This volume, published at the time of the centennial of the Yale Medical School, records the life and activities of one of its first professors, Dr. Nathan Smith, previously founder and for several years sole teacher of the Dartmouth Medical School, later associated with the foundation and early instruction of the medical schools of Bowdoin and the University of Vermont. It consists in considerable part of Dr. Smith's private letters, now first printed, and appropriately arranged, which reveal most intimately the character and versatile personality of this distinguished figure in New England medical history. A majority of the letters are to the late Dr. George Cheyne Shattuck, of Boston. The book is attractively illustrated with 24 full-page plates, and there is a delightful introduction by Dr. William H. Welch. An appendix records Dr. Smith's publications, and reprints in full his introductory lecture at Yale on "The Progress of Medical Science."

A Treatise on Clinical Medicine. By William H. Thomson, M.D., LL.D. Octavo volume of 667 pages. W. B. Saunders Company, Philadelphia and London, 1914.

The author has not aimed to produce a book of reference but rather a serviceable book for the practicing physician. In keeping with this idea the style is informal; there are exceedingly few references to the literature and much emphasis is laid on medicinal treatment. There are no illustrations. The very brief space devoted to the morbid anatomy of the various diseases impresses the reviewer as a serious drawback.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, JANUARY 14, 1915.

Editors.
Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D. } *For the Massachusetts Medical Society.*
Frederick T. Lord, M.D. }

Committee of Consulting Editors.
Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.
Edward C. Streeter, M.D., Boston, *Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 *Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

TRANSFER OF THE BOSTON QUARANTINE SERVICE.

In the two preceding issues of the Journal we have commented editorially on the proposed transfer of the Boston quarantine service from municipal to federal control. At the hearing held on this subject before the Common Council on January 1, the opposition to the proposed change was chiefly, as at the previous consideration of the subject last spring, from the shipping interests of the city. Mr. Jerome Jones, a member of the committee on maritime affairs of the Boston Chamber of Commerce, presented the following letter to Mayor Curley, representing the opinion of his committee on the subject:—

"The Committee on Maritime Affairs of the Chamber of Commerce deem it unwise, in that a change of jurisdiction would be a handicap to our port facilities, and I am not putting the question of facilities above the safeguarding of the community.

"I do not question Dr. Rupert Blue and his sincerity in doing what he can. At the same time we feel that the quarantine regulations at the port of New York have been safeguarded in every way, and they have been lenient in allowing ships to come up from quarantine with thousands of passengers later than sunset and before sunrise; thus facilitating the landing of the passengers and making the port attractive to both steamship lines and passengers.

"We have no doubt that the first federal officials would be accommodating, but from the experience in southern ports, where the change has been made, it has been found that the boarding officials' watches are always right at sunrise and sunset, and vessels have to wait in quarantine when the many passengers are anxious to go ashore and their friends come from distances to meet them. It not only affects this port, but all of New England and trade tributary to it.

"We feel that when New York adopts the change, as it is doubtful, it will be time enough for us here, and while we respect your desire to save the city's money, it should not be done at the expense of the facilities of the port. The tidal hour has much to do with big vessels coming up to the pier, and the denial of the quarantine officer might often mean waiting 20 hours for the flood tide. Boston and New York are the two largest passenger ports on this continent, and we certainly deserve at this port equal quarantine service."

On the other hand the proposed transfer was advocated by Mr. Sullivan, the corporation counsel, by Mr. Edward H. McSweeney, chairman of the port directors, and by Drs. H. D. Arnold, G. H. Francis and O. R. Sedgwick, representing the Suffolk and Norfolk Districts of the Massachusetts Medical Society and the Boston Homeopathic Medical Society. At a joint meeting of the executive committees of these organizations on December 22, the following resolutions were passed:—

"That the best interests of the citizens of Boston demand a reorganization of the Health Department. The plan of a Health Commissioner, as a single officer responsible for the work of the Department would, in our opinion, be the most satisfactory solution of the problem, provided he be a man of national reputation and trained in matters of public health and sanitation. The proposed salary of seventy-five hundred dollars should make it possible to secure the services of such a man.

"We therefore recommend the passage of the proposed ordinance, now under consideration by the City Council, for the reorganization of the Health Department.

"Since this ordinance provides for the establishment of a quarantine division, and since His Honor, the Mayor, has recommended the transfer of the city quarantine station to the federal service, we feel that it is appropriate to express an opinion on this matter also.

"It is our conviction that the management of the quarantine station by the federal authorities would be conducive to the better protection of the health of this city and of the country at large.

"This is a matter of the greatest importance in view of the greatly increased danger to be expected from diseases brought by immigrants after the end of the European war.

"We therefore endorse the proposition to transfer the quarantine station to the federal authorities, and recommend the amendment in this particular of the ordinance to reorganize the Health Department."

IN another part of this issue of the JOURNAL we print in full the statement prepared for presentation by Dr. Arnold to the Common Council. This may fairly be taken as representing the attitude of the Boston profession. At the time of the hearing, action by the Council was deferred, but as the decision is one of importance and must soon be made, it is desirable that physicians generally should hold and express definite views. A comparison of the arguments for and against the proposed transfer shows that the opposition to it is based on questions of business convenience and advantage. Such considerations as these are probably ill-founded, as is shown in Dr. Arnold's statement. Even if they were not, they should not be allowed to weigh in comparison with advantages of administration and the interests of the public health.

◆

THE PRACTISE OF MEDICINE IN CHINA.

AT the annual meeting of the Boston Medical Library on Tuesday Evening, January 12, Dr. Francis W. Peabody presented an interesting lantern talk on "Western Medicine in China," illustrating the advances made in the introduction of occidental medical science into the orient. Dr. Peabody speaks from recent experience, having returned but a short time ago from his work on the Rockefeller Commission in making a medical survey of China.

In this connection there is a considerable interest in the medical publications which have developed in the far east under the influence of western science. As in other matters, in the domain of medicine there is seen going on at the present time in the Celestial Empire the struggle, hard indeed, but destined to ultimate victory, of the modern and enlightened against the antiquated, ignorant and hidebound. The modern leaven is, of course, small as compared with the whole vast lump, but it is working and working powerfully. At various points there are well-equipped hospitals, medical schools, and laboratories, and there is now in China a very considerable number of European and American physicians, most of whom have had excellent professional training, while some are men of the highest scientific attainments. One of the agencies by which they make their influence felt is the *China Medical Journal*, which has just reached its twenty-ninth volume. It is published by the China Medical Missionary Association, a representative body, with branches in all the principal districts, and is a periodical which reflects great credit on that organization. One of its departments which is of special interest is that of tropical diseases. It solicits contributions from medical practitioners not only in China, but in Japan, Korea, Siam and the Philippine Islands, and many of its original articles are of great scientific value; such, for instance, as the report, in the issue for November and December, of the researches by Dr. H. E. Eggers of the Laboratory of Pathology and Bacteriology, Harvard Medical School of China, at Shanghai, on the spirochetic infection of ulcers in China.

In the same number of the *Journal* there is to be found an interesting paper by Dr. William W. Cadbury, of Canton, on "Medicine as Practised by the Chinese." While the author freely acknowledges his indebtedness to Jules Regnault's work, "Médecine et Pharmacie chez les Chinois et chez les Annanites," much of his material is the result of personal observation or derived from Chinese scholars familiar with some of the medical classics of their country. He divides medicine in China into two classes: the purely superstitious, which depends upon charms and magic, and the art of medicine as practised by the Chinese physician. In the city of Canton, he says, may be found temples dedicated to the "Spirit of Medicine," and the ignorant believe that the presiding deity will restore health upon the payment of small sums of money and the performance of certain rights. The Chinese physician, however, is a quite different individual from the Taoist priest, although magic and astrology form an important part of his armamentarium.

The practise of medicine in China is unlicensed, and is usually hereditary, the "skilled" physician handing down his secrets to one of his sons. The study of human anatomy has been hampered by two factors: respect for the dead and the lack of any co-operation or organization among physicians. As the earth has courses of water, so man has courses in the pulse—six in number, three *yang* and three *yin*. The *yang* is the warm principle, actively flowing and symbolized by the sun; the *yin* is the moist principle, passively flowing and symbolized by shadow. If the former predominates there is excitation, and if the latter, depression of the organism; and the equilibrium of these two forces constitutes health. Six vessels carry the active principle, and six the passive, and the two spread through the whole organism by means of gases and the blood. The latter makes a complete circulation of the body about fifty times in 24 hours, passing twenty-five times through the male channels (those of the active principle) and twenty-five times through the female channels (those of the passive principle). The action of these principles depends on twelve organs and each of the organs has a canal by which it communicates with the others. Some of the communicating channels terminate in the hands, and some in the feet, and one of the vessels in the little finger is used to determine the nature of most infantile diseases. The viscera are classified under two groups, the first composed of six in which the *yang* resides, namely, the gall-bladder, stomach, small intestine, large intestine, bladder and left kidney; and the second composed of five viscera in which the *yin* resides, namely, the heart, liver, lungs and right kidney.

Auscultation and percussion are wholly unknown to the Chinese physician, and in making a diagnosis entire reliance is usually placed on the general facies of the patient and the character of the pulse. Sometimes the examination includes the tongue, and thirty-six symptoms are said to be made out from its color and the extent of its coating. The tongue and cheeks vary with the state of the heart, the tip of the nose with that of the stomach; from the general appearance of the face and nose the condition of the lungs may be determined; that of the liver by examination of the eyes and eyebrows, that of the kidneys by the ears, and that of the spleen by the mouth and lips. Each organ has its appropriate color, red corresponding to the heart, white to the lungs, black to the kidneys and bladder, yellow to the stomach and spleen, and blue to the liver and gall-bladder. Organs also have their own peculiar times and seasons. Thus the heart, the characteristic element of which is fire, is most likely to become inflamed at noon in the summer season. Two substances are found circulating in the body,—gas and blood. The former acts upon the latter as the wind upon the sea, and the result is the production of the pulse in the vessels. More stress is laid upon examination of the pulse than anything else. Usually the physician is satisfied with palpation of the radial in both wrists, but in difficult cases examines the pulse at ten other points in the body. This method of diagnosis is carried out to the utmost refinement, with separate palpations with each finger, etc., and there are no less than twenty-seven varieties of pulse which prognosticate death. The physician must be trained to palpate the pulse so skilfully that by this sole means the nature of a disease, and even the month of gestation in a pregnant woman, may be determined.

Curiously enough, the drugs and other medicaments employed are weighed out according to a decimal system; but the character of the remedies themselves scarcely corresponds with this enlightened procedure. Often a prescription is given because of the resemblance of a drug to the organ affected. Thus for renal disease haricot or kidney beans are ordered; the red flowers of the hibiscus serve as emmenagogues; saffron is given for icterus. Minerals are administered as salts; plants in the form of roots, stems, leaves, flowers and dried fruits. Tigers' bones are often ground up and given to a debilitated person, and among the other animal substances made use of are the dried bodies of grasshoppers and the shell of the cicada. Impotence is treated by preparations of testicle or of nervous tissue, and diseases of the liver and eyes by pork liver. In certain districts cooked human blood is considered an excellent remedy, and at executions people may be seen collecting the criminal's blood in vessels. Pills are frequently made with a thick coating of paraffin; this is meant to be broken off, and the contents chewed up. They are generally so large that they could not be swallowed otherwise. Various forms of plasters and blisters are applied to the skin, and the actual cautery is in common use. Occasionally acupuncture is resorted to, and 388 points in the body are described as suitable for its performance. The theory on which its use is based is that if one punctures the vessels connecting different organs the disease will become absorbed.

In the last few years two so-called charitable hospitals have been established in Canton for the treatment of the sick according to native methods, but no surgery is practised at these institutions.

THE TRANSPLANTATION OF TISSUES AND ORGANS.

THE transplantation of tissues in the human body is one of the important developments of modern surgery. Beginning with the simpler forms of skin-grafting, the process has been extended successively to fascia, tendon, bone, and even to such a delicate structure as the cornea. The possibility of transferring these tissues successfully has become of immense value in the plastic treatment of numerous bodily lesions and defects, in the repair of fractures and bone-diseases associated with loss of substance, in the mechanical remedy of certain forms of paralysis, and occasionally in the mobilization of ankylosed joints.

The transplantation of organs, as more recently developed by Carrel and various of the German surgeons, has opened new fields of surgical therapeutic opportunity, which have thus far been but partly explored. The transference of more complex structures, such as kidneys and joints, has hardly advanced beyond the experimental stage; but the possibility of transplanting intestinal segments in the plastic surgery of the vagina and urethra has been satisfactorily demonstrated. The enormous technical difficulty of such procedures will probably always restrict their performance to the hands of specialized experts. There is, however, another important group of organs, the glands of internal secretion, whose transplantation offers important prospect of benefit beyond that derived from the oral or subcutaneous administration of their extracts.

The knowledge of the endocrinous glands is again one of the valuable advances of modern medical science. Beginning with the study of thyroid secretion in the treatment of exophthalmic goitre, it has been extended to the adrenals, the parathyroids, the genital glands, and more recently, by the brilliant surgical researches of Cushing and others, to the pituitary. The complex functions and interrelations of this group of glands form one of the latest and most fascinating chapters of physiology, and the still undetermined possibilities of their surgical and medical use hold prospect of control and cure of many serious functional aberrations and incapacities.

Among the transplantable organic tissues, one of the most commonly and easily available is the ovary. The problem of preserving ovarian tissue, both for its internal secretion and for ovulation and menstruation, is one that frequently confronts the gynecologist. Dr. Storer, in his leading article in another column of this issue of the JOURNAL, reviews the history, technic and indications of ovarian transplantation, and reports his personal work on the subject. It is a valuable contribution to recent surgical progress.

Hitherto the majority of tissue and organ transplantation has been homoplastic, within the body of the host. Heteroplastic transplants, from one individual to another, or from animal to man, thus far have but a limited field of application, being restricted to the lower, less completely differentiated tissues, like skin, bone, and tendon. This is a field, however, which contains almost limitless possibilities of research. A completed knowledge of the physiology of the glands of internal secretion, and a full development of the successful technic of both homoplastic and heteroplastic transplantation, would place important therapeutic power within the reach of medical and surgical application.

HEALTH CONDITIONS IN BOSTON IN 1914.

A PRELIMINARY report issued on January 4, by the Boston Board of Health, indicates that the death-rate in 1914 was only 15.8, the lowest in the history of the city. This gratifying result is evidence, not only of increasingly good public health conditions, but of the development of an intelligent popular interest in the limitation and eradication of disease.

The actual number of deaths in 1914, with the population numbering 766,136, was 11,808. In 1913, with the population at 750,768, the number of deaths was 11,839. Of the 11,808 deaths in 1914, 2003 were infants. In 1913 the number of infants who died was 2111. The number of deaths from measles, scarlet fever, whooping cough and tuberculosis was less in 1914 than in 1913, the greatest decrease being with whooping cough, from which there were 97 deaths in 1913, and only 46 in 1914. Deaths from measles were reduced from 77 in 1913 to 63 in 1914; deaths from scarlet fever were reduced from 77 to 65, and deaths from pulmonary tuberculosis from 1064 to 1041. The number of deaths from typhoid fever increased from 60 to 66, and deaths from diphtheria increased from 156 to 168.

The infant mortality rate in 1914, under one year, was only 100 per thousand births, as compared with 110 in 1913 and 151 in 1903. Of the individual causes of death, tuberculosis still leads in the number of fatalities. The following table shows the comparative deaths in certain important groups during the years 1913 and 1914.

DISEASE.	1913	1914
Deaths from typhoid fever	60	66
Deaths from measles	77	63
Deaths from scarlet fever	77	65
Deaths from whooping cough	97	46
Deaths from diphtheria	156	168
Deaths from pulmonary tuberculosis	1064	1041
Deaths from cancer	841	875
Deaths from external causes (violence)	873	829
Deaths of children under 1 year	2111	2003

In the same connection there is considerable interest in a report by Dr. Thomas F. Harrington, Director of School Hygiene, on the health conditions of pupils in the Boston public schools in 1914, showing a notable decrease in defectives during the past eight years.

"The total number of pupils now in school whose vision is not normal is 11,039, or 12.08% of the total number of pupils tested, which was 91,326. The percentage of defectives eight years ago was 31.5.

The number of pupils defective in hearing this year is 2538, or 2.8% of the total of 93,024 examined. This represents a substantial reduction of defective hearing from 8.13% eight years ago.

During the past eight years 23,655 cases of defective vision and 4806 cases of defective hearing were corrected. In the same time over 12,000 cases of obstructive adenoids and tonsils were operated on.

The statement that defective vision increases markedly as the children progress in their studies is not borne out by statistics. The percentage of defectives in the elementary and high school grades is nearly uniform, as the percentage in the elementary schools is from 10.74 to 14.70 and in the high schools 10.52 to 11.34."

AN ABSURD MEDICAL BILL.

ON Wednesday of last week, January 6, the General Court of Massachusetts convened for its annual session of 1915. Among many important pieces of medical legislation to be brought before that body during this season, is one piece of meddlesome legislation whose obvious absurdity should lead to its immediate defeat. This is a bill to regulate conditions of surgical practice in this Commonwealth. The provisions of the bill are as follows:—

"Section I. No surgeon, physician, dentist, nor other person, performing, directing or assisting at a surgical or dental operation upon a human, either on public or private property in this State, shall wear the hirsute appendages commonly known as moustache and beard.

Sect. 2. The Boards of Registration in Medicine, and of Registration in Dentistry, acting jointly, shall have full authority to prosecute violations of this act.

"Sect. 3. Violations of this act shall be punished by a fine not exceeding $50.

"Sect. 4. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

"Sect. 5. This act shall take effect upon its passage."

The manifest absurdity of this bill requires no further comment. It might, with equal reason, require of all surgeons that the head should be shaved. Undoubtedly this proposed measure will be promptly defeated.

MEDICAL NOTES.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—At the closing session of the American Association for the Advancement of Science, at Philadelphia, on Jan. 1, Professor W. W. Campbell of the University of California, was elected president for the ensuing year.

Other officers chosen include L. C. Howard, Washington, D. C., permanent secretary; Henry Skinner, Philadelphia, general secretary; Robert M. Ogden, University of Kansas, associate secretary for the South; Albert L. Barrow, University of California, secretary of the Pacific division; and R. S. Woodward, Carnegie Institution, Washington, treasurer.

Next year's annual convention will be at Columbus, O., during the week beginning Dec. 27. A midsummer meeting will take place at San Francisco, Aug. 2 to 7.

EUROPEAN WAR FUNDS.—On Jan. 8 the total of the New York Belgian relief fund amounted to $783,954.00; the New York Jewish relief fund to $282,990.00; the American Ambulance Hospital fund to $265,006.00; and the American Polish relief fund to $7,675.81.

On Jan. 9 the total of the New England Belgian relief fund amounted to $168,512.52; the Massachusetts Red Cross fund to $95,946.20; the Boston branch of the American Ambulance Hospital fund to $50,230.45; the Boston Jewish relief fund to $24,681.10; the New England British relief fund to $16,418.52; the Boston Polish relief fund to $10,917.16; and the Boston Russian relief fund to $10,568.00.

STUDIES ON LEPROSY.—In a recent bulletin (No. 66) of the United States Public Health Service, Dr. George W. McCoy presents the 25th, 26th, and 27th of a series of studies on leprosy, being a continuation of the important work in this subject begun in 1908, by the United States Public Health Service. The present communication deals with studies in immunity in leprosy, with the cultivation of acid-fast bacilli from lepers by the use of symbiotic organisms, and with a statistic study of leprosy in Hawaii. The author finds that the serum of but few lepers agglutinates any acid-fast cultures, and serologic methods are of chief value in making group classifications of such bacilli. Immunization of rabbits with leprous material does not yield agglutinins for acid-fast cultures. The cultivation of these acid-fast organisms is best made by the use of symbiants.

THE SANITATION OF IQUITOS.—In a recently published reprint (No. 233), Dr. G. M. Converse of the United States Public Health Service, describes a recent sanitary campaign for the improvement of public health in Iquitos, a Peruvian port twenty-three hundred miles from the mouth of the Amazon River and only four degrees south of the Equator. Its average temperature is about 86° F. and it has a high humidity and rainfall. The population consists of about twelve thousand inhabitants, mostly Indians. There is no public water supply, no sewerage system and no local hospital. During the ten years from 1903 to 1913, this town had an average mortality of 40.5 per thousand, increasing to an average of 46.5 from 1910 to 1913, and 49.5 in 1912. The principal work undertaken by the author was the eradication of yellow fever and intestinal parasites, the chief cause of death and disease among the natives. This was accomplished by the regular sanitary methods, and in 1913 the death-rate fell to 28.8 per thousand and in the first half of 1914 to 21. This report presents a striking example of what may be accomplished in the improvement of local sanitary conditions by the application of simple hygienic methods rigidly enforced.

NEW YEAR BEGINS WITH LOW DEATH-RATE IN NEW YORK.—The new year has opened with a slightly lower death-rate than that of the first week of 1914, the rate for the two weeks under comparison being 14.30 and 14.43, respectively, a decrease of .13 of a point, which is equivalent to a relative decrease of 14 deaths.

The most noteworthy feature of mortality for the week just passed was the considerable increase in the number of deaths charged to pneumonia, there having been 277 deaths reported during the week, as against 225 during the first week of 1914. The increase in the deaths from broncho-pneumonia was distributed among the children at the early ages, while that from lobar pneumonia was distributed among the age group between five and sixty-five years.

The total number of the deaths from infectious and contagious diseases, measles, scarlet fever, diphtheria and croup, whooping cough, typhoid fever, cerebrospinal meningitis and diarrheal diseases was considerably below that of last year.

HARVEY LECTURE.—The sixth lecture, in the current course before the Harvey Society, will be given at the New York Academy of Medicine on Saturday evening of this week, Jan. 16, by Dr. Edward R. Baldwin, of the Adirondack Cottage Sanatorium, on "Immunity in Tuberculosis, with Special Reference to Racial and Clinical Manifestations."

THE CORONER SYSTEM IN NEW YORK.—On Jan. 4, Leonard M. Wallstein, New York commissioner of accounts, filed with Mayor Mitchel a report recommending the abolition of the present coroner system in New York City and the substitution therefor of the system of medical examiners as it exists in Massachusetts.

By examination of nearly four hundred witnesses, the report says, it has been found that "the elective coroner in New York City represents a combination of power, obscurity and irresponsibility which has resulted in inefficiency and malfeasance in the administration of the office"; that of the sixty-five coroners who have held office since consolidation, not one was thoroughly qualified for the adequate performance of his duties; that the incompetent medical work of the coroner's physicians deprives the community of an absolutely necessary deterrent to crime; that because of this fact numerous homicides have undoubtedly failed of detection, and infanticide and skilful poisoning can be carried on almost with impunity so far as the coroner's office is concerned; that coroners' juries have been packed with friends of the defendants appearing before them; that coroners have abused their powers to compel the employment of favored undertakers, attempts have been made to extort money from insurance companies in return for findings in the interest of the companies, and many other forms of petty graft and abuses have been practised. The report urges that the jury system and the coroners' court be eliminated, the responsibility for criminal investigations be given completely to the district attorney and the police, and the new medical board be composed of experienced pathologists, the chief of whom should be appointed by the mayor as the result of a non-assembled competitive examination.

BOSTON AND NEW ENGLAND.

Measles in Sturbridge.—Report from Sturbridge, Mass., on Dec. 31, states that there were then 30 cases of measles in that town, 13 being in one family.

Work of Milk and Baby Hygiene Association.—The recently issued annual statement of the Boston Milk and Baby Hygiene Association shows that during the year 1914, a total of 4108 babies under one year of age were cared for by the institution.

Opening of the Carter Memorial Hospital.—On Jan. 1, 1915, the new Carter Memorial Hospital, at Lancaster, Mass., was formally opened, and its keys presented to the trustees of the Clinton Hospital Association. Dr. Walter P. Bowers, of Clinton, presided, and addresses were made by Governor Walsh and others. On Jan. 2 the hospital was opened to public inspection. It is a local institution for the treatment of tuberculosis.

Meningitis, Pellagra, and Poliomyelitis in Massachusetts.—During the month of November, 1914, 11 cases of cerebrospinal meningitis were reported in Massachusetts, 6 being in Boston. During the same month, 9 cases of poliomyelitis were reported in Massachusetts, and 16 in Virginia; 3 cases of pellagra in Massachusetts and 28 in Virginia.

Conviction of a Vermont Druggist.—In the issue of the Journal for Dec. 3, 1914, we noted the death of 14 persons in Vermont from poisoning by whiskey adulterated with methyl alcohol. The druggist who sold this whiskey has been tried, convicted of manslaughter, and sentenced to 12 or 15 years' imprisonment.

Notification of Deficiencies in Water Supply.—The following circular letter was sent on Dec. 31, 1914, by the State Commissioner of Health of Massachusetts, to the local health boards of such towns in this Commonwealth as are dependent on sources of water supply likely to become depleted during the present drought:

"At the present time, on account of the deficient rainfall of the past few months, many wells that are used for domestic water supply are dry and small reservoirs have become considerably depleted. While these conditions are not extraordinary, they are more serious than have occurred at this time of year for three or four years and, while public water supplies, except those drawn from streams having little storage, are as yet not greatly affected as a rule by these conditions, the private supplies derived from wells, springs, etc., in villages and on farms have in many cases become exhausted and water is being drawn from sources not commonly used.

"In view of these conditions, it is advisable to warn the public, especially that part of it that is supplied with water from private sources, of the dangers of typhoid fever and other diarrheal diseases to which they may be exposed by the taking of water from unusual sources. They should be warned to look carefully to the possible impurity of such sources and to protect themselves against danger of infection, if the source used appears in any way doubtful, by boiling the water before using it for drinking. Especial care should also be taken by physicians to report promptly all suspected cases of typhoid fever and dysentery (winter cholera) to the proper officers.

"In cases where a citizen of a town is in doubt as to the safety of any temporary water supply which he may propose to use, he should apply to the local board of health of the town for advice. If it should happen that any city, town, water or aqueduct company finds itself short of water, or in danger of a shortage, it should apply at once to the State Department of Health for advice as to an additional supply, unless such action has already been taken.

A. J. McLaughlin,
Commissioner of Health.

Admission Requirements to Harvard Medical School.—New requirements for admission to the Harvard Medical School, proposed by the faculty of medicine, have been accepted by the college corporation. Hereafter, candidates may be admitted to the medical school on the following terms:—

"Graduates in arts or science of approved colleges or scientific schools who can furnish evidence (*a*) that they have such a knowledge of physics, of biology, of general chemistry and of organic chemistry as may be obtained from one year's course in each of these subjects as given in approved colleges and scientific schools; (*b*) that they have a reading knowledge of French or German.

"Students who have completed two years of work in a college or scientific school of high rank, provided they present certificates: (1) that they have stood in the upper third of their class; (2) that one year's course has been taken in physics, in biology, and in general chemistry and in organic chemistry, and (3) that they have a reading knowledge of German or French."

An Important Medical Bequest.—The will of the late Dr. William H. Baker, of Waltham, Mass., which was filed on Jan. 2 in the probate court at East Cambridge, Mass., contains a bequest of $50,000 to the Harvard Medical School to endow a professorship of gynecology, on condition that the chair shall be separate from those of surgery and obstetrics. In case the gift should not be accepted on these terms, the fund reverts to the Free Hospital for Women, Brookline, Mass.

Hospital Bequests.—The will of the late Dr. Edward R. Cogswell, of Cambridge, Mass., who died on Dec. 22, 1914, was filed on Jan. 1, 1915, in the probate court at East Cambridge, Mass. It contains a bequest of $2000 to the Cambridge Hospital.

The will of the late Rebecca H. Hobbs, of Waltham, Mass., which was filed in the probate court at East Cambridge, Mass., on Dec. 31, 1914, contains bequests of $5000 to the Waltham Hospital, $1000 each to the Waltham Training School for Nurses, and the Waltham Baby Hospital, and $500 to the Waltham District Nurses' Association.

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending Jan. 5, 1915: Diphtheria, 49, of which 4 were non-residents; scarlatina, 52, of which 7 were non-residents; typhoid fever, 6; measles, 94, of which 1 was non-resident; tuberculosis, 36, of which 2 were non-residents. The death-rate of the reported deaths for the week was 19.06.

Current Literature

Medical Record.

December 26, 1914.

1. McWilliams, C. A. *Reflex Disturbances Due to Chronic Appendicitis.*
2. *Packard, E. N., Jr. *Therapy of Fever in Pulmonary Tuberculosis.*
3. Buerger, L., and Oppenheim, A. *Gangrene Without Organic Vascular Disease.*
4. Crofton, A. C. *Intestinal Toxemia and Diabetes.*
5. Berkowitz, S. *Ehrlich's Aldehyde Reaction for Urobilin.*
6. Ware, M. W. *A New Vesical Calculus Evacuator.*

2. Packard considers the following the important points in the treatment of phthisical fever: Absolute rest in bed, preferably out-of-doors, ample but not forced feeding, hydrotherapy, the judicious use of antipyretics, autogenous vaccines if there is copious, purulent expectoration, artificial pneumothorax in selected cases, and tuberculin cautiously after other methods fail. [L. D. C.]

New York Medical Journal.

December 26, 1914.

1. Burr, C. W. *Hysterical Astasia-Abasia Occurring in Acute Multiple Neuritis.*
2. Lee, E. W. *Physical Defects a Factor in the Cause of Crime.*
3. Branth, J. H. *Physical Defects and Crime.*
4. Meding, C. B. *Intracapsular Extraction.*
5. Tonsey, S. *Radium and Roentgen Therapy Facilitated by Double Coated Adhesive Plaster.*
6. France, J. J. *Gonococcus Infection in Women.*
7. O'Day, J. C. *Syphilis in Simulating Malignant Neoplasms.*
8. Erdman, S. *Wounds of Arteries.*
9. Price, G. M. *Industrial Sanitary Standards.*
10. Weinstein, J. *Tuberculosis of the Tongue.*
11. Henderson, L. J. *The Excretion of Acid in Health and Disease.*

The Journal of the American Medical Association.

December 26, 1914.

1. Ely, L. W. *Orthopedic Surgery: Its Scope and Its Future.*
2. *Chute, A. L. *A Plea for a More Extensive Operation in Cancer of the Bladder.*
3. *Squier, J. B. *Subtotal Cystectomy.*
4. *Skillern, P. G. *Certain Minute Cysts of the Metacarpal Bones Following Trauma, and Their Clinical Recognition.*
5. Barnett, C. E. *Suprapubic Prostatectomy.*
6. *Barney, J. D. *The Ultimate Results of Genital Tuberculosis in the Male.*
7. *Nelson, K., and Harris, E. F. *Observations of the Results of Seven Months' Experience in the Treatment of Syphilis.*
8. Woolley, P. G. *Factors Governing Vascular Dilatation and Slowing of the Blood Stream in Inflammation.*
9. Gordon, A. *An Unusual Form of Birth Palsy.*
10. *Ritter, J. *Early Recognition of Pulmonary Tuberculosis by Study of Lymphocytic Picture and Albumin Contents of Sputum.*
11. King, E. F. *Myiasis of the Urinary Passages.*
12. Baldwin, J. F. *Adrenal Precocity. Precocious Development of the External Genitals Due to Hypernephroma of the Adrenal Cortex.*
13. Warfield, L. M. *A Simplified Method for the Intrameningeal Injection of Neosalvarsan in Syphilis of the Nervous System.*
14. Davis, C. M. *A Case of Ulcerative Pneumococcus Enteritis with Peritonitis Following Lobar Pneumonia.*
15. Huber, G. N., and Flack, F. L. *An Unusual Case of Screw Worms in the Nose and Nasal Accessory Sinuses.*
16. Hildreth, E. R., and Sutton, A. C., *Oidomycosis in Porto Rico.*

2. Chute does not go into the technic of radical operation, but rather devotes his paper to the reasons for such procedure, speaking especially for the more thorough removal of diseased lymphatics.

3. Squier in his paper devotes himself almost entirely to the description of the technic of subtotal cystectomy.

4. Skillern has an extremely interesting article on minute bone cysts of the metacarpal bones, which is worth reading.

6. Barney's paper gives figures of much interest and importance. He finds that tuberculosis of the genital tract is accompanied by old or active lesions in other organs in more than 55% of cases, most of them being in the lung. The genital tract is usually first attacked in cases of genito-urinary tuberculosis.

Over 27% of 113 patients traced died of some form of tuberculosis. Miliary, renal and lung tuberculosis, in order, are the prevailing types of the disease. Barney believes that until ten years have elapsed after operation, no patient can be said to be cured of this form of tuberculosis. In genital tuberculosis, neither the disease nor the operation for its relief seems to impair masculinity. Experience shows that although the prostate and seminal vesicles are involved in most cases of epididymal tuberculosis, this condition will improve or heal after removal of the epididymis. Radical surgical treatment of these organs is unnecessary and unwise.

7. These authors make the emphatic statement that, as compared with salvarsan, neosalvarsan is a comparatively inert drug and its use should be abandoned in favor of the former if we wish to do our patients justice. They state that four injections of salvarsan combined with intensive mercurial treatment give nearly twice as many negative serum reactions as do five injections of neosalvarsan with mercury. The ratio is 64 to 33.3%.

10. Ritter believes that a sputum lymphocytosis showing under the microscope 50% or more of the small mononuclear leucocytes with a moderate amount of albumen by chemical test speaks very strongly for the presence of a pulmonary tuberculosis. In pre-incipient or incipient cases of pulmonary tuberculosis a lymphocytic sputum is usually present, with a greater or lesser albumen content; in this the tubercle bacillus may be entirely absent or only occasionally found. The presence of the mononuclear lymphocyte in the sputum in preponderant amounts and a positive albumin test is simply the forerunner or near the beginning of positive findings, for the tubercle bacillus, if not already present in the sputum, will soon be found. [E. H. R.]

Archives of Internal Medicine.

November, 1914.

1. Hewlett, A. W. *The Pulse Flow in the Brachial Artery. Reflections of the Primary Wave in Dicrotic and Monocrotic Pulse-Forms.*
2. Tileston, W., and Comfort, C. W., Jr. *The Total Non-Protein Nitrogen and the Urea of the Blood in Health and in Disease, as Estimated by Folin's Methods.*
3. *Capps, J. A., and Davis, D. J. *An Epidemic of Streptococcus Sore Throat in Jacksonville, Ill., Which Was Traced to the Milk of Cows Affected with Streptococcus Mastitis.*
4. *Gay, F. P., and Claypole, E. J. *An Experimental Study of Methods of Prophylactic Immunization Against Typhoid Fever.*
5. Gay, F. P., and Claypole, E. J. *Specific Hyperleucocytosis. A Study in Typhoid Immunization.*
6. Fitz, R. *A Case of Diabetes Insipidus.*
7. *Hamburger, W. W., and Friedman, J. C. *Contributions to the Experimental Pathology of the Stomach. I. Experimental Pyloric Stenosis.*
8. *Levy, L. H., and Strauss, A. *A Clinical and Bacteriological Study of Hexamethylenamin as a Urinary Antiseptic.*
9. *Webb, G. B., Gilbert, G. B., and Havens, L. C. *Blood Platelets and Tuberculosis.*
10. Hamman, L., and Baetjer, F. H. *Pulmonary Physical Signs and Roentgen Ray Findings in Healthy Adults.*

3. Capps and Davis report a study of an epidemic of 348 cases of streptococcus sore throat which occurred in Jacksonville, Ill., in the winter of 1913-14. The epidemic was traced to the milk of cows affected with streptococcus mastitis. The streptococci in the milk were found to have hemolytic properties. They did not multiply appreciably at room temperatures because of the inhibiting influence of other milk bacteria. They were soon killed by the acidity of sour milk or buttermilk and died out in ordinary butter in a few days. They lived in ice cream for at least three weeks without appreciable loss of numbers or virulence. There was good reason to believe that in this epidemic ice cream played an important rôle as a carrier.

4. Gay and Claypole advocate the testing of typhoid immunity by means of an artificial typhoid-carrier state in the rabbit, and describe their technic. Their experiments show that untreated bacteria, killed and precipitated by alcohol, dried, ground and weighed, do not protect so well as typhoid bacilli that have been sensitized by an immune serum and subsequently treated in the same manner. The sediment of unsensitized bacterial bodies freed from the supernatant, endotoxic fluid contains the immunizing principle almost in its entirety. Alcohol-killed, sensitized cultures protect almost as well as living sensitized cultures, and the sediment of the former better than the living cultures. These sensitized cultures produce a more durable type of immunity and cause less reaction, both local and general. For prophylactic immunization the writers recommend three injections at two-day intervals of such a culture, perfectly polyvalent, in the dose of 3/32 mg. of the original dried culture, which corresponds approximately to 750 million living typhoid bacilli. They consider the skin test with the typhoidin solution of far more value than the agglutination reaction with immunized serum as an index of the degree of protection.

7. Hamburger and Friedman conclude from experiments on dogs that pyloric obstruction with resulting motor insufficiency and continuous secretion is probably the most important factor in the production of chronic experimental ulcer. It is probable that in man primary partial pyloric stenosis (from whatever cause) with secondary motor insufficiency and continuous secretion is largely responsible for the progression and delayed healing of chronic ulcer.

8. Levy and Strauss report a study of hexamethylenamin as a urinary antiseptic. They find that in neutral solutions in concentrations up to 1:10 it is neither inhibitory nor bactericidal. Given in doses of 7½ grains three times a day, it is broken down into formaldehyde in all acid urines. Formaldehyde is formed in the bladder in all cases except in those in which the acidity of the urine is higher than normal. In these cases some formaldehyde is formed in the kidneys. With a dose of 7 grains of hexamethylenamin three times a day formaldehyde is never present in concentrations greater than 1:5000. The only organism which is destroyed or whose growth is inhibited by this concentration is the typhoid bacillus. For the destruction or inhibition of other organisms a high acidity is necessary and such high acidity in combination with the formaldehyde may injure the kidney tissue. Hexamethylenamin is undeniably efficacious in typhoid fever for the prevention of pyelitis and cystitis.

9. Webb, Gilbert and Havens studied the blood-platelets in tuberculosis in man and in guinea-pigs. They found the platelets consistently increased in number. A change in altitude from sea-level to 6000 feet increased the number of platelets 12%. Their experiments indicate that the platelets either contain or supply opsonin, and that when added to a lethal dose of tubercle bacilli they either prevent infection or modify its course. The addition of serum to a mixture of blood platelets and tubercle bacilli appears to interfere with this modification. [L. D. C.]

Deutsche Medizinische Wochenschrift.

No. 38. September 17, 1914.

1. v. Hansemann, D. *The Cancer Problem.*
2. *Risel. *The Diagnosis of Smallpox.*
3. *Glaser, F. *Salvarsan in Scarlet Fever.*
4. Lethaus. *Sciatica Treated by Nerve Injections.*
5. Korb, P. *Iod-prothaemin.*

2. Risel states that small-pox, typically, has an incubation period of about twelve days. This is followed by a pro-dromal period of three days, characterized by a sudden onset of fever, malaise and vomiting. These symptoms subside with the appearance of the smallpox eruption. The rash is very diffuse and is seen over the entire body but may be most abundant on the exposed surfaces. It is first papular, but rapidly becomes vesicular and pustular. It tends to involve the deeper layers of the skin. The blood shows a leucocytosis with marked increase in the large mononuclear cells. In the most severe and acutely fatal cases of smallpox, the eruption may have a hemorrhagic character. The true rash may be preceded by a diffuse and transitory erythema or purpura.

Chicken-pox is the disease most likely to be confused with smallpox. In this the skin lesions are more superficial, and all stages from papules to pustules are seen at the same time. The rash is less thickly distributed on the extremities and more thickly over the abdomen. The characteristic leucocytosis is absent.

Finally, animal inoculation may be used for differential diagnosis. Subcutaneous injections into rabbits of serum from the chickenpox vesicle will produce no reaction, while the serum from a smallpox vesicle will produce characteristic lesions. This procedure, however, takes a few days, and thus is not particularly valuable.

3. Glaser has treated scarlet-fever with salvarsan because a positive Wassermann reaction has been found in various cases at the height of the disease, on account of the beneficial action of the drug in certain ulcerative forms of tonsillitis, and because of its good effect on many protozoan diseases, of which scarlet fever may be one.

Glaser reports a series of 42 cases, including severe cases, and mild cases. His results show that salvarsan had no effect in the most severe cases. In others, the fever and mental confusion were often relieved after the drug was injected. The various complications of scarlet fever were not influenced by the treatment. A diphtheroid membrane, if present, seemed to clear up more readily. Chills, vomiting, or diarrhea appeared in over one-half the cases following injection. [R. F.]

No. 39, September 24, 1914.

1. *Bonhoeffer, K. *Psychiatry in War.*
2. Axenfeld, T. *The Surgery of the Eye in Warfare.*
3. Grober. *Cremation in Warfare.*
4. *Boeters, O. *The Vaccine Treatment of Gonorrhea and Gonorrheal Complications.*
5. Schall, M. *Recent Technical Improvements in Medical and Sanitary Instruments.*
6. Schuster. *The Organization of a Proper Public Health Service During the War.*
7. Hamlock. *The Early Diagnosis and Treatment of Epidemics During War. (Review.)*
8. Schwalbe, J. *A Letter from Ernst v. Bergmann Written During the Russian War in 1877.*
9. Dreyer, L. *First Impressions of War Surgery.*
10. Obendörffer, E. *Letters from the Battle Front.*

1. Bonhoeffer feels that under the psychical and physical stress of war, individuals with a predisposition to mental instability become diseased more readily than under normal conditions. The symptoms of such disturbance may take the form of phobias or hallucinations so that a soldier becomes dangerous to himself and his companions, and tends to render military discipline difficult to enforce. Or the symptoms may occur as paralyses or convulsions, developing during a disease. Dementia precox and dementia paralytica, too, seem to develop more readily among fighting soldiers. Therefore Bonhoeffer believes that men who are subject to neuroses should be considered unfit for military duties. Those soldiers who develop signs of mental disturbance should be sent from the firing line at once, or if this is impossible should be quieted with hypnotics.

4. Boeters has treated a series of cases of gonorrhea and its complications with intravenous or intramuscular injections of a proprietary vaccine sold under the name of Arthigonin. He believes that vaccine therapy is of great value in local gonorrheal infections (prostatitis, epididymitis, parametritis, etc.), and also in metastatic lesions. Arthigonin is of value in diagnosis on account of the general reaction obtained in specific cases following its injection.

[R. F.]

Münchener Medizinische Wochenschrift.

November 3, 1914.

1. Schridde. *Congenital Status Lymphaticus.*
2. Unna. *The Removal of Hair from the Face.*
3. Schotten. *Fatal Poisoning by Male Fern in a Case of Addison's Disease Clinically Latent.*
4. Gerlach. *The Comparative Dose of Roentgen and Gamma Rays.*
5. Kohlrausch. *The Physical Basis for Radium Therapy.*
6. Wollenberg. *Nervous Diseases Among Those in the War.*
7. Mühlens. *Peliosis and Relapsing Fever.*
8. Walther. *Hydrogen Peroxide and Its Preparation in the Treatment of Wounds.*
9. Heddäns. *The Serum Treatment of Tetanus.*
10. Verth. *Directions for the First Treatment of the Woundea in a Sea Fight.*
11. Loose. *Roentgen Examinations in the War.*
12. Schanz. *Spectacles for Gunners.*
13. Schlange. *Surgical Observations and Experiences in the Field.*

Münchener Medizinische Wochenschrift.

No. 45. Nov. 10, 1914.

1. *Holzknecht. *Localization of Foreign Bodies.*
2. Nieden. *Technic of the Abderhalden Dialysis Reaction.*
3. *Pöhlman. *A Fresh Infection of Syphilis in Tabes Dorsalis.*
4. Dieterich. *What Varnishes Are Suitable for Wounds.*
5. Schredde. *The Management of a Base Hospital.*
6. Kohlrausch. *The Physical Basis for Radium Therapy.*
7. *Fraenkel. *Gas Gangrene.*
8. Franke. *A Case of Gas Phlegmon.*
9. Hotz. *Wounds of the Central Nervous System.*
10. Guleke. *The Treatment of Gunshot Wounds of the Spinal Cord.*
11. Kuhn. *An Apparatus for Local Anesthesia.*
12. Simon. *The Danger of Anaphylaxis in the Serum Treatment of Tetanus.*
13. *Euricke. *The Treatment of Tetanus with Magnesium Sulphate.*
14. Angerer. *Serum and Symptomatic Treatment of Tetanus.*
15. Bandorf. *Contribution to the Treatment of Infected Wounds and the Rapid Healing of Large Defects.*
16. Pitzner. *Concerning Wounds of the Bladder.*
17. Nobiling. *Concerning Wounds of the Bladder.*
18. Mühlens. *Typhus and Relapsing Fever.*

1. Several illustrations with good descriptions are given showing various technics which are of use in localizing foreign bodies in the skull and trunk and limbs.

3. Pöhlman gives in detail the case of a man infected with syphilis 36 years previously and having definite signs and symptoms of tabes dorsalis who

presented himself for treatment with a primary lesion typical in every diagnostic point except that spirochetae were not looked for. The incubation period, course of the lesion and reaction to mercury and salvarsan were characteristic. Pöhlman believes it to be a fresh infection on top of an old infection.

7. Gas gangrene: If there is a pure infection of the gas bacillus no suppuration takes place and the only sure way of differentiating from malignant edema is by animal inoculation which takes from 12 to 18 hours. Staining is also fairly accurate as the differences between the gas bacillus, anthrax and the germ of malignant edema are well marked. The treatment consists first in getting oxygen into the tissues by means of free incisions, oxygen and hydrogen peroxide. Amputation may be best. The patient's strength must be kept up.

13. Euricke is not favorably impressed with the use of magnesium sulphate: He used it on eight cases with poor success as the sickest cases were little if any influenced. He gave an intradural injection of 10 c.c. of 10% sol. and 8 c.c. three days later. He insists that it can never take the place of the serum.

[E. L. Y., Jr.]

BULLETTINO DELLE SCIENZE MEDICHE.

SEPTEMBER, 1914.

1. VANNINI, G. *The New Diets in the General Hospital of Bologna.*
2. *BONOLA, F. *Contribution to the Study of the Grey Commissure of the Thalamencephalon.*
3. CAVINA, G. *An Interesting Case of Cardioptosis.*

2. As a result of his anatomic investigations, Bonola concludes that the grey commissure of the thalamencephalon in man is the rudiment of a commissural nucleus analogous to the nucleus of the median line in the lower animals. In phylogenesis this nucleus has become involuted until it has reached the low development in the human species, and in ontogenesis also it has undergone important involutionary modifications.

[R. M. G.]

Miscellany.

THE TRANSFER OF THE QUARANTINE STATION.*

MODERN maritime quarantine is not a matter of solely local character and importance, on account of the fact that large numbers of persons are in transit through the ports of entry to various places throughout the whole country. Only a relatively small proportion of immigrants landing here remain in Boston. It is as much a matter of national concern as the immigration service, or the coast defenses. The expense of an adequate quarantine service should be borne by the National Government and not by the City.

Uniformity of quarantine regulations and of quarantine procedure throughout the ports of the country are desirable, not only for the protection of the health of the people, but in the interest of commerce.

It is to the advantage of the shipping interests to have only one set of regulations to meet in the various ports of the country—the minimum regulations prescribed by national law. Local boards must live up to these requirements—but they may impose additional restrictions. Where the local and national services both exist at the same port, there is danger of conflict and confusion, and of consequent delay.

If the quarantine is under federal administration, the quarantine work and the inspection of immigrants—administered by the same department of the public service—can be carried out as efficiently as at present, yet with a saving of time.

It is believed that in the long run federal control of quarantine will be fully as acceptable to the shipping interests as local control. This has been the experience where this system has been adopted.

The advantage is still greater in times of danger, when it is known that quarantinable diseases exist at ports from which vessels come, or in countries from which the immigrants come. Such information is reported promptly to the Public Health Service, either through its own agents or the representatives of the Department of State. If the Public Health Service has control of quarantine, the necessary measures for protection—which it would enforce any way—can be taken without delay, and can be arranged so as to cause the least possible delay and inconvenience to shipping that is compatible with safety. Under such conditions of danger, not only would the direct control of quarantine by the Federal Government be of advantage to the shipping interests, but it would better guard the health of the country. One organization, which can inspect abroad at the ports of departure, and again at the ports of entry, and which has authority to follow cases over the country, must be more efficient than if an independent body is interposed as the middle link of this chain.

Such conditions of danger we must face in the near future. This is the opinion of the medical profession, of the Public Health Service, and of all who have given serious thought to the situation. This is due to the European war.

Proper hygienic measures are impossible under the conditions in which the vast armies are fighting. The medical service is inadequate. Typhoid fever is prevalent. It is reliably reported that cases of cholera have occurred, and we know this disease became prevalent in the Balkan war. We recall the ravages of the plague in Manchuria during the Russo-Japanese war, and there is danger of the introduction of this disease through the Russian army. It will be a miracle if Europe is not involved in epidemics of these diseases before the war ends. And soon after we shall have hordes of immigrants from the infected regions.

Cholera and plague are the two diseases most to be dreaded—and expected through the war. The danger from smallpox coming from Southern Europe will be increased. The most efficient protection is none too good. Federal control is better than local control under these circumstances—in fact, it cannot be avoided.

---

* A statement prepared for presentation by Dr. H. D. Arnold before the Boston Common Council.

If we grant, for the sake of argument, that the shipping interests might enjoy certain temporary advantages if the quarantine remains for a time longer under local control, they would lose much more in the apparently inevitable control by the Federal Government when we face these dangers in the near future. The change in the face of danger would mean serious delay in establishing an effective organization,—which could now be inaugurated without inconvenience.

Should cases of cholera or plague reach this port, and gain a foothold through ineffective preparation, the loss to the shipping interests would be enormous; and the expense to this community in eradicating these diseases would be immense. We have only to cite the recent experiences of New Orleans and San Francisco to enforce this lesson.

It is recognized that under the ordinary conditions of the past our local quarantine service has been efficient. It can hardly be claimed, however, that its officers have had as good experience as those available in the Public Health Service have had, in dealing with emergencies of the kind expected. Furthermore, the equipment of our quarantine station is entirely inadequate to deal properly with such emergencies.

It is folly to wait until the emergency is upon us, that is, if we have any regard for the commerce of this port. What commerce needs is a station not only to accommodate persons who are actually sick, but to provide properly for those who are well and must be detained for observation. A steamer should be able to discharge its passengers at once, be disinfected, and proceed with the least possible delay. Anything less than that means serious financial loss. Proper equipment of this station cannot begin too soon. It means a large expenditure—perhaps more than a hundred thousand dollars. The National Government is ready to take up this problem and undertake the proper development of this station. The citizens of Boston should not be called upon to bear this expense. Yet, unless we surrender the quarantine to federal control, we must undertake this work ourselves or we recklessly endanger our health and the business interests of the whole community.

Hitherto the shipping interests of this port have opposed the transfer of quarantine from local to federal control. The medical profession is unwilling to believe that they would urge their own interests at the expense of the welfare of this whole community; and it concludes that they cannot have had a realizing sense of the dangers that are so apparent to medical men in the near future.

I understand that the shipping interests have maintained that they would be subjected to restricted hours of service and to delay through appeals to Washington, which they would not be subjected to by local authorities.

I am assured by Surgeon-General Blue, of the Public Health Service, in answer to my direct questions, that:—

> Under Federal control of quarantine, the convenience of vessels as to time of examination will receive as much consideration as has been given by the local authorities, and that there will not be any stricter enforcement of regulations about hours of quarantine.
>
> The officer in charge of the Boston quarantine station, if it should be transferred, would have as absolute authority as possible; and the result, as far as concerns possible appeals, would be as fully as satisfactory as at present.
>
> This is the fixed policy of the Department, and is not dependent upon the individual in charge at any given time.

It has also been urged, I believe, that Boston should not make this change until it is also made in New York and Baltimore—rival ports. It is difficult to understand wherein the advantage of local control would lie, under the above guarantees, because it is expressly stated that the local service does not give any advantage by lax regulations, but only by a willingness to be accommodating. Even if it were true that some slight advantage to shipping interests lies in local control, when quarantine conditions remain as quiet as in the past, we must look ahead and consider the interests of this port. We are almost sure in the near future to be obliged to meet conditions of danger, in which the Federal Government will feel obliged to step in and exert its authority. With the inadequate provisions of our station, Boston, as a port, would suffer seriously in competition with these other ports.

For the above reasons we earnestly urge the City Council to authorize at the present time the transfer of the Boston quarantine station to the control of the Federal Government. In addition, it would seem probable that the shipping interests would receive more coöperation, if we thus meet the wishes of the National Government in its plans to protect the country against the importation of disease.

BRITISH RED CROSS HOSPITALS.

THE following details of the British Red Cross Hospitals at Calais and Dunkirk appeared in a recent issue of the *British Medical Journal:*

"It seems sometimes to be assumed in England that Calais and Dunkirk are British hospital bases. This is not the case; neither of them is occupied by the British forces, and our own Army Medical Service exercises no control over the medical arrangements existing therein. It occasionally happens that a British soldier gets included in a batch of French or Belgian wounded, and is taken to one of these towns for treatment, and since these towns are not far removed from the British lines, unsanitary conditions in them, or rather, the existence of a considerable amount of epidemic disease, might complicate matters for our own army authorities. These towns have, however, a direct interest for the British public, owing to the fact that there are established within them an aggregate of about ten voluntary hospitals of British origin. For the most part they are working under the nominal control of the French or Belgian authorities, but at one time and another nearly all of them have received more or less extensive assistance from or through the British Red Cross Society itself, and still require it. Moreover, the ambulance work connected with those at Dunkirk is under the direct control of this Society.

"Of the two hospitals at Calais, one is concerned with the special arrangements proposed for the benefit of the Belgians suffering from typhoid fever. I am unable to describe it more precisely, for at the time of my last visit to Calais it was not complete The other hospital has been at work for some weeks. It owes its foundation, I understand, to a subscription got up in the Baltic Exchange in London, and is fortunate in having its nursing arrangements in the hands of a lady who, at the time of her appointment, had only recently returned from a long tour of corresponding work in the Balkans. This hospital, which ranks as a British Red Cross institution, shares the Sophie Berthelot School—a very large building—with a French Red Cross hospital, and can accommodate 80 or 90 Belgian wounded. A third extemporized institution in the town should also be mentioned, though except for the fact that most of its nurses have been supplied by the British Red Cross Society, I do not know that it can be regarded as in any wise British. This is the Jeanne d'Arc Hospital. It is under the control of Professor Depage, whose chief assistant is Dr. J. van de Velde, and is doing some very admirable surgical work.

"Of the seven hospitals in Dunkirk, much the largest is that known as the Duchess of Sutherland's Hospital. It has about 70 beds, and, under the very active control of Millicent Duchess of Sutherland herself, has been leading a useful if somewhat ambulatory existence almost since the beginning of the war. Another— and one of the youngest—is supported by the Quaker community, and is apparently very well organized. A third, which represents Edinburgh and the Border towns, has a very strong staff, but seems to be badly off for funds—a malady from which most of the hospitals in Dunkirk appear to suffer. As they are all quite small institutions, and with one exception are all housed in rather flimsy buildings of the summer residence order, it is possible that their common object would be better attained if a process of amalgamation were carried out. That object is the benefit of the French wounded, and its desirability is not in the least diminished by the fact that the principle on which the French medical authorities are working is that of evacuating to his own territorial area every wounded man who can possibly be moved. It might be well if the small committee which represents them with the French authorities besides bringing about one or more amalgamations, were strengthened by the inclusion of a larger French official element.

"The voluntary hospitals at British bases, such as Boulogne, Rouen, Paris, and Havre, are in a different position; they all work under the general authority of Sir Arthur Sloggett in his double capacity of Director-General of the Army Medical Service (overseas) and of Chief Commissioner of the British Red Cross Society and St. John Ambulance Association. As the operations of the British Red Cross Society in France now extend over so wide a field, and it is obvious that they will have to be continued for a very long period, it seems to be thought best that general administrative control should be placed in the hands of someone accustomed to the management of large commercial undertakings."

◆

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE.

The Massachusetts Society for Mental Hygiene, an organization recently formed in this state, has issued as its first publication a report stating its aims and purposes, the following quotations from which indicate the field in which the society purposes to work:—

"During the fiscal year ending Nov. 30, 1913, there were admitted to the various State hospitals 5007 patients. During the same period there were under care in the various hospitals 889 epileptics, 1444 inebriates, 18,971 insane (including those in private hospitals), making a grand total for feeble-minded, epileptic, inebriate and insane under care during the year, of 24,005. The hospitals spent during the year $4,264,919.-71, which sum was more than one-quarter of the State's total expenses for the year.

"These figures, impressive in size though they are, obviously do not represent the whole number of persons affected, since, with few exceptions, each patient represents a family; nor the total cost, since to the above must be added the cost of rearing and educating those who become incapacitated through mental disease, the loss in earning capacity, etc.

"If all this were unavoidable, it would be well to say little. But much of it is avoidable. Many of the forms of mental disease are subject to control just as are tuberculosis, typhoid fever, or smallpox. Each of the three great causes producing the above toll is fundamentally preventable. The problems associated with them are admittedly numerous and intricate, but the fact remains that they are the producers of the great majority of mental diseases, and unnecessarily so. The society aims to educate the people as to the real causes of mental disease and to instruct the general public in plain and tested measures for preventing disease.

"The society proposes to provide competent speakers to address groups in any part of the state, on the causes and prevention of mental disease; to distribute such pamphlets and leaflets as will interest and inform the general public; to familiarize the public with the methods used by the state in the care and treatment of mental cases; to maintain for general use a collection of literature on the subject of mental disease and its prevention, together with information in regard to progress made in other states and communities in the care and treatment of mental cases; to furnish information to physicians, social workers and others, as to the public facilities for the diagnosis, care and treatment of mental cases, and as to the laws, rules and practice in regard to availing themselves of these facilities; to study, so far as time and funds will permit, and to stimulate others to study, the different phases of the problem of mental hygiene, and to publish the results of such studies."

The officers of the society are: President, Judge Harvey H. Baker; vice-president, Dr. Walter E. Fernald; secretary, Dr. Charles E. Thompson; treasurer, John Koren; executive secretary, Dr. Frankwood E. Williams.

Among the directors are: Pres. Eliot, Dr. James J. Putnam, Dr. Alfred E. P. Rockwell, Worcester; Miss Edith N. Burleigh, Dr. Henry R. Stedman, Prof. Robert M. Yerkes, Dr. George T. Tuttle, Waverley; Rev. Michael J. Scanlan, Dr. Everett Flood, Monson; Bishop Lawrence, Frank L. Randall, Dr. Walter Channing, Supt. Dyer, Robert A. Woods, Dr. Ernest V. Scribner, Worcester; Edwin Mulready, Dr. E. E. Southard, Pres. Butterfield, Amherst; Dr. Irwin H. Neff, Norfolk; Dr. John A. Houston, Northampton; Dr. Herbert B. Howard, W. Murray Crane, Dalton; and David Snedden.

THE FRENCH BIRTH-RATE.

The following data about the diminishing French birth-rate were published in the issue of the *Lancet* for Dec. 12, 1914:—

"The diminishing birth-rate, disquieting as it always is, is more so at the present time, when it has so important a bearing on events. The births fell from 750,651 living children in 1912 to 745,539 in 1913. So low a figure had never been recorded, with the exception of 1911, when it was regarded as deplorable. To estimate the lamentable and continued shrinkage of the French birth-rate it suffices to recall that the annual mean of living births was 945,000 during the period 1872 to 1875, that since 1907 the number of births has fallen below 800,000, and since 1911 below 750,000. That is to say, that in less than 40 years the births in France have diminished by 200,000 a year. The proportion of living children notified to 10,000 inhabitants was 188 in 1913, as against 190 in 1912, 187 in 1911, 196 in 1910, and 205 in 1906. The shrinkage increases year by year. It is true that in all the great countries of Europe the birth-rate is decreasing, but in a much less degree than in France, and, moreover, the annual excess of births over deaths is proportionately from six to ten times greater than in France. Thus, for 1912 the excess of births over deaths per 10,000 inhabitants was in France only 15. In the same year it was in the Low Countries 158, in Italy 140, in Hungary 130, in the German Empire 127, in Austria 107, and in England 105. Last year the excess was 41,901 births, or only 10 per 10,000 inhabitants. The excess of 1912 was 57,911, or 15 per 10,000. There has thus been a diminution of one-third. This diminution springs from a simultaneous deficit of 5112 births and an increase of 10,898 deaths. Last year an excess in births was noted in 49 departments in place of in 56 in 1912. The departments in which the birth-rate exceeds the mortality are those of the Nord, Pas de Calais, Bretagne, the frontier regions of the North-Est, Limousin, and Corsica. On the other hand, Normandy and Dauphiny continue to depopulate. The proportion of births per 10,000 inhabitants was 196, as against 198 in 1912. The departments in which the birth-rate was highest were Pas de Calais, 266 children per 10,000 inhabitants; Finistère, 259; Morbihan, 248; Seine Inférieure, 240; Meuthe and Moselle, 239; Côtes du Nord, 236; Lozère, 219; Doubs, 217; Nord, 216; Mayenne, 213; Vendée, 211; and Vosges, 210. Those in which it was lowest are the Valley of the Garonne and Bourgogne; Gers, 129; Lot et Garonne, 134; Yonne, 137; Nièvre, 141; Allier, 143; Lot, 145; Haute Garonne, 147; Gironde, 148; and Ariège, 149. The number of deaths, 703,638 (stillbirths 31,119, excluded) is greater by nearly 11,000 than that of 1912, which was the lowest recorded since the beginning of the present century. The ratio of deaths for the entire population was 178 per 10,000 inhabitants, as against 172 in 1912, 196 in 1911, and 179 in 1910. The death-rate has risen in 64 departments, and particularly in the Bouches du Rhône, the Dordogne, the Var, Haute Savoie, Corsica, the Somme, Haute Vienne, Aveyron, and Tarn-et-Garonne. The Norman and Breton departments continue among those furnishing the largest proportion of deaths."

The phenomena of the French birth-rate are not only of the greatest sociologic significance, but have added importance in view of the possibility of a long continuance of the European war and the imperative need of constant reinforcements.

BELGIAN PHYSICIANS' RELIEF FUND.

The following is the report of the Treasurer of the Committee of American Physicians for the Relief of the Belgian Profession for the week ending January 2, 1915.

Contributions:

H. F. W.	$ 25.00
B. C.	2.50
D. W. C.	25.00
V. P. G.	25.00
Mrs. J. B. M.	100.00
E. F. B.	5.00
C. W. N.	25.00
In Memory H. H. C.	10.00
S. J. M.	15.00
D. B.	25.00
Total	$257.50
Disbursement	None
Contributions previously reported.	405.00
Grand total	$662.50

The following local contributions are also gratefully acknowledged:

Dr. David W. Cheever	$25.00
In Memory of H. H. C.	10.00
Dr. E. S. Boland	5.00
Dr. F. W. Stetson	10.00
Dr. Henry M. Swift	10.00
	$60.00

NOTICES.

Physicians visiting the city will be cordially welcomed at the following clinics on the days and hours specified.

The Boston City Hospital.—After January 1, 1915, public operations will be performed in the Surgical Amphitheatre each week, on Thursdays, Fridays and Saturdays, at 10 o'clock.

Thursday: First Surgical Service. Dr. Blake.

Friday: Third Surgical Service. Dr. Nichols, and Fourth Surgical (G-U) Service. Dr. Thorndike.

Saturday: Second Surgical Service. Dr. Lund.

Notice of these operations will be sent to anyone expressing his desire to receive it.

Massachusetts General Hospital.—1. A surgical clinic Tuesday, at 12, in the out-patient amphitheatre. 2. Operations in the Bigelow amphitheatre Saturdays from ten to one. 3. Operations in the Surgical Building daily except Sunday, from nine to one. 4. Daily surgical ward visits at which visiting physicians will be welcome. 5. Clinic in medicine and pathology Tuesday at twelve, by Drs. R. C. and H. Cabot and O. Richardson. 6. Medical clinic Thursday at twelve, by Dr. D. L. Edsall.

Peter Bent Brigham Hospital.—Physicians visiting the city will always be cordially welcomed at the Peter Bent Brigham Hospital.

The medical visit takes place regularly every morning beginning at 10 o'clock.

Operations are usually going on throughout the forenoon in the surgical amphitheatre.

The surgical clinic is held in the clinical amphitheatre on Wednesdays at 12.30 P.M.

The medical clinic is held in the clinical amphitheatre on Mondays at 12.30 P.M.

The clinico-pathological demonstration is held in the clinical amphitheatre on Fridays at 3.30 P.M.

Boston Milk and Baby Hygiene Association.—For the week beginning January 18, there has been booked at B. F. Keith's Theatre a one-act play entitled "Milk," by Miss Una Clayton, which aims in a very popular way to teach the lesson of the importance of pure milk with special reference to infants and baby hygiene.

On Tuesday morning, January 19, at 11 o'clock, a public meeting will be held at Keith's Theatre at which Miss Clayton will explain her purpose in writing and presenting this play. At the same meeting there will be shown moving pictures dealing with the production of clean milk and welfare work for babies in large cities. This meeting will be held under the auspices of the Milk and Baby Hygiene Association of Boston. Admission will be free.

SOCIETY NOTICE.

New England Pediatric Society.—The thirty-fifth meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, January 29, 1915, at 8.15 P.M.

The following papers will be read:

1. "Acidosis in Children," Arthur A. Howard, M.D., Boston.
2. "Parenteral Immunization in Conditions of Proteid Sensitization," J. L. Goodale, M.D., Boston.
3. "Weaning—Its Relation to Anaphylaxis as Shown by Differential Blood Counts," H. C. Berger, M.D., Boston.

Light refreshments will be served after the meeting.

E. M. Buckingham, M.D., *Pres.*
R. M. Smith. M.D., *Sec'y.*

RECENT DEATHS.

Dr. Henry Dusenbury of Williamsburg, N. Y., died recently in that city. He was born at Albany in 1833 and received the degree of M.D. in 1866 from the New York College of Physicians and Surgeons. He was at one time a United States Army Surgeon. He is survived by his widow and two sons.

Dr. Klaus Hanssen, who has died recently at Bergen, Norway, was born in 1843. He was chief physician of the Municipal Hospital at Bergen and a Fellow of the Norwegian Academy of Medicine and was a leader in the national movement for the eradication of tuberculosis.

Dr. James Stopp Shaw, who died at Beachmont, Mass., on January 1, was born at Newcastle, England, in 1838. Migrating to the United States in 1852, he studied dentistry and settled in practise successively at St. Johnsbury, Vt., Sheffield, Iowa, and Fremont, Neb. Returning to Boston, he undertook the study of medicine and received the degree of M.D. from Boston University in 1876. He was a member of the Massachusetts Homeopathic Medical Society, the Boston Homeopathic Medical Society and an assistant in gynecology at the Boston University Medical School. He is survived by his widow.

Dr. Albert Van Gehuchten, Professor of Neurology at the University of Louvain, died on December 9, at Cambridge, England.

APPOINTMENT.

Dr. E. O. Crossman of Lisbon, N. H., has been appointed Superintendent of the New Hampshire State Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Fever, Its Thermotaxis and Metabolism, by Isaac Ott, M.D. Paul B. Hoeber, 1914.

Lead Poisoning. Lectures by Sir Thomas Oliver, M.D. Paul B. Hoeber, 1914.

Fisk & Arnold

Established 1865

Oldest Manufacturers in New England of

ARTIFICIAL LIMBS

For Every Amputation.
United States
Government
Bonded
Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates a limb for unjointed knee amputation, with toe, ankle, and knee articulation.

A full descriptive catalogue with important suggestions to the patient will be forwarded upon application.

3 Boylston Place, Boston, Mass.

Telephone, Oxford, 3684-M.

INDEX TO ADVERTISERS

PAGE
Anheuser-Busch 5
Armour & Co. 16
Attleboro Home Sanitarium 11

Beal Nurses' Home and Registry 13
Boston City Hospital Male Nurses' Club 13
Boston Nurses' Club Registry 13
Bournewood Hospital .... Brookline, Mass. 12

Central Directory, Suffolk County Nurses 13
Channing Sanitarium .... Brookline, Mass. 12

Douglas Sanatorium .... Dorchester, Mass. 11
Dr. Givens' Sanitarium .... Stamford, Conn. 12
Dr. Mellus' Private Hospital .... Newton, Mass. 12

Elm Hill .... For Feeble Minded Youth 12

Fisk & Arnold .... Artificial Limbs 15
Fisk Hospital .... Brookline, Mass. 13
For Rent 6
For Sale 6
French Lick Springs .... Pluto Water 14

Glenellis Sanitarium .... Andover, Me. 12

Harvard Dental School 10
Harvard Medical School 10
Herbert Hall Hospital .... Worcester, Mass. 12
Highland Spring Sanatorium .... Nashua, N. H. 11
Hoffmann-La Roche Chemical Co. 9
Hood's Milk 8
H. O. Oatmeal 2
Household Nursing Association 13

Jefferson Medical College of Philadelphia 11

King's Puremalt Department 15

PAGE
Malden Registry of Nurses 13
Medical School of Maine .... Bowdoin College 10
Medical Echo 6
Medico-Chirurgical College of Philadelphia 11
Millet Tuberculosis Sanatorium 13
Mulford, H. K. Co. 7

New England Orthopedic Apparatus Co. 8
Newton Sanatorium .... West Newton, Mass. 12
New York Polyclinic Medical School 10
New York University .... Medical Department 11
Notices 6
Nurses' Directory 13

"On-the-Hill" Sanitarium .... Watertown, Conn. 12

Parke, Davis & Co. .... Chemists 2
Pierce, Dr. A. H. .... Card 12
Pomeroy Company 14
Primrose Maternity Home .... Batavia, N. Y. 11

Ring Sanatorium .... Arlington Heights, 12

Saunders, W. B. Co. .... Books 1
Sharp & Dohme .... Chemists 16
Sherman's Bacterins 14
Squibb, E. R. & Sons 9
Sundelius, Gustaf .... Masseur 13
Syracuse University .... College of Medicine 10

Thomas, F. H. Co. 4
To Let 6
Tower Hall .... Derry, N. H. 12
Tufts College Medical School 10

Waltham Registry of Nurses 13
Wanted 6
Warren Chambers 6
Wellesley Nervine 12
West Newton Home School 11
Westport Sanitarium 11
Woodside Cottages .... Framingham, Mass. 12

"The Best Malt I Have Used"

This glowing tribute was paid to KING'S PUREMALT by a prominent practising physician. His original letter is on file at our office.

KING'S PUREMALT

Is widely used by physicians, all over New England. It is recommended by them to their patients in all cases of loss of sleep, general run down condition and convalescing from operations. Nursing mothers will find KING'S PUREMALT the ideal food and tonic.

Everybody can take it. Makes well folks stay well. Helps sick folks to get well.

KING'S PUREMALT is packed in boxes containing 1 dozen and 2 dozen each, and in barrels containing 10 dozen.

Pronounced by the United States Internal Revenue Department **NOT** an Alcoholic Beverage.

KING'S PUREMALT is sold at all drug stores and in strict conformity with the Pure Food and Drug Act of June 30, 1906.

ASK ANY DRUGGIST ANYWHERE

KING'S PUREMALT DEPARTMENT

36-38 HAWLEY STREET, BOSTON

King's
PUREMALT

ARMOUR AND COMPANY
CHICAGO

To Doctors and Druggists:

SOME of the most valuable medicines are of animal origin. Pepsin, Pancreatin, Thyroids, Pituitary Liquid, Corpus Luteum, Red Bone Marrow, etc., are made from materials supplied by abattoirs.

All glands and membranes used in manufacturing medicines should be perfectly fresh and normal. All animals from which glands and membranes are taken should be healthy. Armour and Company are in position to guarantee the condition of all raw material used in making their therapeutic products and the health of the animals from which this raw material is taken.

Every cow, pig and sheep killed by Armour and Company is inspected by the U. S. Government, and every gland is selected with rigorous care. All raw material is put into process before it has had opportunity to deteriorate, and all finished preparations are analyzed and made to conform to the most reliable standards.

Armour's facilities for manufacturing organo-therapeutic agents are unequaled anywhere, and we believe it is to the interest of Physicians and Pharmacists and their clientele to specify **Armour's** when any remedy of animal origin is required. Literature on request.

ARMOUR AND COMPANY, Chicago

TO AVOID ACCIDENTS AND AFFORD SECURITY
FOR SELF AND PATIENT
WHEN ORDERING OR PRESCRIBING MERCURY BICHLORIDE,
SPECIFY

THREADED MERCURY BICHLORIDE TABLETS S&D.

Each tablet is attached to all other tablets BY A THREAD, and packaged in a specially designed bottle, thereby rendering it impossible that a tablet should be used either day or night without having first detached it by cutting the thread or slipping the tablet from the thread.

Besides this unique feature of threading, these tablets are TREFOIL IN SHAPE, BLUE IN COLOR, STAMPED POISON and packaged in bottles of peculiar shape with the word POISON blown in raised letters on the corners.

ACCURACY, EFFICIENCY AND SAFETY ASSURED.

PROTECT YOURSELF AS WELL AS YOUR PATIENT BY SPECIFYING

THREADED MERCURY BICHLORIDE TABLETS S & D.

PACKAGED ONLY IN BOTTLES OF 25 TABLETS EACH.

SHARP & DOHME
CHEMISTS SINCE 1860
BALTIMORE NEW YORK
CHICAGO ST. LOUIS NEW ORLEANS ATLANTA PHILADELPHIA

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

THE BOSTON
Medical and Surgical
JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 3

THURSDAY, JANUARY 21, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

MEDICAL ADDRESSES

I. FRANCIS BISHOP HARRINGTON, M.D. *By Herman F. Vickery, M.D.*, Boston.
II. THOMAS MORGAN ROTCH, M.D. *By Charles Hunter Dunn, M.D.*, Boston.
III. CHARLES PICKERING PUTNAM, M.D. *By William Bradford Robbins, M.D.*, Boston.

ORIGINAL ARTICLES

COMPENSATORY EXERCISES AS AN AID IN THE TREATMENT OF LOCOMOTOR ATAXIA. *By H. M. Swift, M.D.*, Portland, Me.
DIABETES AND SURGERY. *By Edward H. Risley, M.D.*, Boston.
DIFFERENTIATION OF HUMAN AND COWS' MILK BY COLOR TESTS. *By R. S. Eustis, M.D.*, Boston.
RECOVERY FROM COCCIDIOIDAL GRANULOMA. *By S. B. Wolbach, M.D.*, Boston.

CLINICAL DEPARTMENT

THE ALCOHOLIC INJECTION OF THE INTERNAL BRANCH OF THE SUPERIOR LARYNGEAL NERVE. *By Irving Sobotky, M.D.*, Boston.

MEDICAL PROGRESS

SEVENTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY. *By Drs. Osgood, Soutter, Bucholz, Low, Danforth*, Boston. (Concluded.)

EDITORIALS HOSPITAL EFFICIENCY. EXERCISES IN THE TREATMENT OF TABES.
THE PROPOSED ABOLITION OF THE OFFICE OF CORONER IN NEW YORK.
THE IMPORTANCE OF THE PHYSICAL EXAMINATION OF THOSE ATTENDANT UPON INFANTS.

For complete table of contents, see first text page.

JUST OUT

Kolmer's Infection, Immunity & Specific Therapy

Dr. Kolmer's book gives you a full account of infection and immunity, and *the application of this knowledge* in the specific diagnosis, prevention, and treatment of disease.

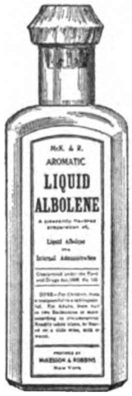
The section devoted to *immunologic technic* gives you every detail, from the care of the centrifuge and making a simple pipet to the actual production of serums and vaccines. In the sections on *infection and immunity* you get the source, defenses, production of disease, toxins, phytotoxins, zootoxins, endotoxins, bacterial proteins, ptomains, mechanical action of bacteria, infection with animal parasites, course of infection, etc.; principles of immunity, the theories, kinds of immunity, the body cell and fluids as factors, phagocytosis, opsonins, opsonic index, bacterial vaccines, antitoxins, ferments and antiferments, agglutinins, precipitins, cytolysins, bacteriolysins, hemolysins, venom hemolysis, complement-fixation reactions (Wassermann and its modifications, gonococcus, typhoid, cancer, etc.), cytotoxins, colloids and lipoids, anaphylaxis.

Under *specific therapy* you get methods of making *autogenous vaccines* and their *actual use* in diagnosis and treatment. The directions for injecting vaccines, serums, salvarsan, etc.—with the *exact dosage*—are here given so clearly that you will be able to use these means of treatment in your daily practice. You also get full directions for making the *clinical diagnostic reactions*—the various tuberculin tests, luetin, mallein, and similar reactions, all illustrated with *colored plates.* The final section is devoted to *laboratory experiments.*

Octavo of 900 pages, with 143 illustrations, 43 in colors, drawn by Erwin F. Faber. By JOHN A. KOLMER, M.D., Dr. P. H., Instructor in Experimental Pathology, University of Pennsylvania. Cloth, $6.00 net; Half Morocco, $7.50 net.

W. B. SAUNDERS COMPANY **Philadelphia and London**

Entered at the Post-office at Boston as second-class matter



CHRONIC CONSTIPATION

Treat your long-standing, obstinate cases, which resist cathartics, by internal lubrication with

AROMATIC LIQUID ALBOLENE

a method which originated in the United States and is to-day approved by the leading European specialists.

Complete literature on application

McKESSON & ROBBINS
91-97 FULTON STREET - - - NEW YORK

Tablets
5 grains, bottles of one hundred and boxes of ten

Powder
In one-ounce cartons

Suppositories
10 grains, boxes of six

Schering & Glatz
150-152 Maiden Lane, New York

A soluble, readily absorbed and promptly excreted, practical, efficient and safe
Hypnotic, Sedative
and
Antispasmodic
which is firmly holding its place against all new comers.

Medinal

The Boston Medical and Surgical Journal

Table of Contents

January 21, 1915

MEMORIAL ADDRESSES.

I. Francis Bishop Harrington, M.D *By Herman F. Vickery, M.D.*, Boston 81
II. Thomas Morgan Rotch, M.D. *By Charles Hunter Dunn, M.D.*, Boston 82
III. Charles Pickering Putnam, M.D. *By William Bradford Robbins, M.D.*, Boston 84

ORIGINAL ARTICLES.

Compensatory Exercises as an Aid in the Treatment of Locomotor Ataxia. *By H. M. Swift, M.D.*, Portland, Me... 85
Diabetes and Surgery. *By Edward H. Risley, M.D.*, Boston 90
The Differentiation of Human and Cows' Milk by Color Tests. *By Richard S. Eustis, M.D.*, Boston 92
Recovery from Coccidioidal Granuloma. *By S. B. Wolbach, M.D.*, Boston 94

CLINICAL DEPARTMENT.

The Alcoholic Injection of the Internal Branch of the Superior Laryngeal Nerve. *By Irving Sobotky, M.D.*, Boston 96

MEDICAL PROGRESS.

Seventh Report of Progress in Orthopaedic Surgery. *By Robert B. Osgood, M.D., Robert Soutter, M.D., Hermann Bucholz, M.D., Harry C. Low, M.D., Murray S. Danforth, M.D.*, Boston. (Concluded) 97

SOCIETY REPORTS.

New England Pediatric Society. Meeting of October 23, 1914 102

BOOK REVIEWS.

Kirke's Handbook of Physiology. By Charles W. Greene, M.D. 104

EDITORIALS.

Hospital Efficiency 105
Exercises in the Treatment of Tabes 106
The Proposed Abolition of the Office of Coroner in New York 106
The Importance of the Physical Examination of Those Attendant upon Infants 108
Disinfection of Sewage from Trains and Steamers 108
Medical Notes 109
Current Literature 111

OBITUARY.

Albert van Gehuchten, M.D. 115

CORRESPONDENCE.

Surgical Instruments for the Belgians. *James J. Putnam, M.D.* 119
Women Physicians in Medieval Times, *William Pearce Coues, M.D.* 119

MISCELLANY.

Memorial Resolutions 116
  Charles Sedgwick Minot 116
  Theodore Willis Fisher, M.D. 117
  George Dexter Bullock, M.D. 117
Angell Memorial Hospital 117
Larrey at Waterloo 118
Intravenous Medication in the Seventeenth Century 119
Changes in the Medical Corps, U. S. Navy 119
Belgian Physicians' Relief Fund 120
Notices, Appointments, Resignations, Recent Deaths, Books and Pamphlets Received 120

Addresses.

MEMORIAL ADDRESSES.*

I.

Francis Bishop Harrington, M.D.

By Herman F. Vickery, M.D., Boston.

Francis Bishop Harrington was of old New England stock, being descended in a direct line from Robert Harrington, who was one of the selectmen of Watertown, Massachusetts, for fifteen years, beginning in 1679. Robert's grandson received the degree of A.B. at Harvard in 1728. Four generations later came the subject of our sketch. He was born in Salem, August 15, 1854. Within six years his father died, at the early age of thirty-three, leaving three sons to be reared by his widow. In this she received substantial aid from her husband's brother, but the little household had frugal ways. In wartime the children were not allowed both molasses and butter on their bread. The mother was a remarkable woman, with the highest sense of truth, honor, and justice, wise and absolutely unselfish. The children of such a mother were fortunate and it was natural that she received to the end the greatest love and veneration. Their home was on the outskirts of the town, purposely so located by the invalid father, and Dr. Harrington never forgot the happy existence he led as a boy, summer and winter, except for the interruption of school hours, in the open fields and rocky caves of Salem. We can see then that various favorable influences acted on young Harrington: his ancestry, a love and opportunity for outdoor sports, the good schools of Salem, the modest worldly circumstances desiderated by Solomon, and above all, a perfect mother.

He entered Tufts College in 1873 and was duly graduated A.B. in 1877, standing as to scholarship about seventh in a class of seventeen. "He quickly won the respect and confidence of his teachers and of the whole student-body." In athletic pursuits he showed general excellence and in the newly-introduced game of football, in which he had had no special training, he was preëminent. A classmate, Professor William M. Hooper, says: "In the great victory won by Tufts [over Harvard] on Jarvis Field, in the autumn of 1875, he was not only unquestionably the best player on our eleven, but proved to be practically invincible to the attacks of our opponents. With the ball safely tucked under his left arm and his long right arm swinging in front like the boom of a derrick, he would tear down the field to a touchdown, leaving in his path a line of Harvard men on their backs." During his college career, he made as has been said, a favorable impression upon the faculty, and in later years he was more than once consulted by the authorities as to matters of college policy.

On leaving Tufts he entered the Harvard Medical School, living for the first year in the College Yard with his cousin, the late Dr. Charles Harrington. During 1880-1881 he served as surgical house pupil in the Massachusetts General Hospital, and in 1882 he received the degree of M.D. He played football on the varsity eleven the first year he was in the Medical School but his whole heart was not in the game. His profession had inspired a deeper and worthier love. Still throughout his life he enjoyed greatly outdoor recreations: tennis, golf, skating, tobogganing, camping, and fishing for trout and salmon in the Adirondacks and New Brunswick. Often he joined in games with his children, as young in his spirits as they. Those who were matched against him in any game did not find it wise to think he was beaten till it was entirely over. He did not particularly enjoy sailing but he visited Europe and Bermuda and the Panama Canal. His excursions showed his wonderful recuperative powers and gave a literal meaning to the word "recreation". For example when he started for Bermuda last spring, he had high blood-pressure, and was worn down with work and agonizing abdominal pain, yet in a few days he was so comfortable and joyous and active that it was not easy to believe that his previous symptoms could have had an organic cause.

---

* Read at the meeting of the Boston Society for Medical Improvement on November 23, 1914.

Throughout his life he read constantly, keeping well abreast of all professional advance and also of the world's progress in general. He had good musical ability. He had a keen sense of humor and caught the diamond flash of a joke wherever it might be; but for him to enjoy it, fun had to be clean and kindly. He faced the truth fearlessly but also he was brave and hopeful and did not forget that the prophecy of a physician may carry with it its own fulfilment. He did not think it wise that the patient should bear the burden of all the untoward possibilities of his condition and he was willing in a critical case to throw his own reputation into the balance if that might help to incline it in the right direction.

In 1882, he began the general practise of medicine in Boston; and in October of the same year he married Miss Abbie Josephine Ruggles of Fitchburg. Of this marriage I cannot omit to say that throughout his life it brought him happiness and inspiration. In 1884, he was appointed physician to out-patients in the Massachusetts General Hospital. Two years later, at the request of others and in accordance with his own preference he was transferred to the surgical side. His subsequent promotions, appointments, and honors have been enumerated in the BOSTON MEDICAL AND SURGICAL JOURNAL of July 16, and in the *Harvard Graduates' Magazine* of September, 1914. They need not be rehearsed now. Our purpose is to discourse, like the storm-tossed Trojans, about our departed comrade. *"Amissos longo socios sermone requirunt."* What sort of a man is it whose loss we mourn, or rather for whose example and companionship these many years we rejoice? He was big and strong, singularly well proportioned, and handsome. His blue eyes were keen but friendly. His countenance revealed strength, intelligence and refinement. His smile gave warmth and cheer. He had modesty, dignity, common-sense and unusual sagacity. He was high-spirited but he kept his temper. Under provocation, his voice became lower and gentler. He did an immense amount of work faithfully. He was efficient in emergencies but he did not wait for the rare occurrence of unusual needs, to serve others. The little duties and the little kindnesses were constantly and most graciously performed. One inferred his religion from his life.

He was a first-rate physician as well as surgeon, and he would have been eminent in his profession if he had never operated. The time came however, about fifteen years ago, when it was physically impossible for him to continue in general practise, so that he occupied himself with surgery exclusively, with brilliant success. His methods have been discussed elsewhere from a technical standpoint. What impressed the ordinary professional observer was his good judgment and thoroughness and the usually successful outcome. And, as was said of him at the meeting of The Massachusetts Medical Society on the day of his funeral, every patient became a friend.

His classmate, Prof. Hooper, describes him well, in the words of President Eliot: "A man of quick perceptions, broad sympathies, and wide affinities; responsive but independent; self-reliant but deferential; loving truth and candor, but also moderation and proportion; courageous but gentle; not finished but perfecting."

The world is better because he lived.

II.

THOMAS MORGAN ROTCH, M.D.

BY CHARLES HUNTER DUNN, M.D., BOSTON.

THE death of Dr. Rotch on March 9, 1914, was a great shock to all of us whose close association with him had made us particularly interested in seeing his plans attain their full completion. His death marked the passing of one of that group of men who played conspicuous parts in the modern revolution of the practice of medicine. The pioneer workers in Pediatrics were but a small group of men, and among these, both as a teacher and a writer, Dr. Rotch had a wide influence upon his profession.

Dr. Rotch was born in Philadelphia on December 9, 1849; received his academic degree at Harvard in 1870, and his medical degree from the same institution in 1874, and served a term as house pupil at the Massachusetts General Hospital in the autumn of 1873. In 1874 he married Helen Rotch, the daughter of William J. Rotch and Emily Morgan of New Bedford. They had one son, Thomas Morgan Rotch, Jr., who was born on May 21, 1878.

At that period no young man's medical education was supposed to be complete without study in Europe, and Dr. Rotch spent two years studying in Germany, Paris and London. When he returned, there was no one in Boston whose practice was devoted exclusively to the diseases of early life. Disease in infancy and in childhood was not regarded as presenting differences from disease in adult life of sufficient importance to call for special knowledge. Dr. Rotch began his career as a general practitioner, but was soon attracted by the interest of the problems encountered in the struggle with disease as manifested in early life. The earlier days of his work were marked by his earnest endeavors to separate his chosen specialty from the domain of the general practitioner, and to point out to his professional brethren the need of special knowledge in this field. His field of work was one in which a high death-rate had come to be taken for granted. Gradually, as time progressed and medical practice became more defined, pediatrics came to be recognized as a specialty, and Dr. Rotch was able to concentrate his energies on his chosen problems.

There was at this time little special teaching in pediatrics in the Harvard Medical School. In 1888 the University established a Professorship for the Diseases of Children especially for Dr. Rotch, his title being later changed to Professor of Pediatrics.

I shall assume that the work of Dr. Rotch as a teacher, writer, and organizer is sufficiently known to this audience to require but brief mention here. Among all his activities, I think he will always be known by his contributions to the subject of infant feeding. When he began to study and write upon this subject, our knowledge and practice were in a most chaotic state, and to him must be given the credit for the earliest exact work on feeding which was done in this country. He was the orginator of the Percentage Method of Feeding, which, while at first opposed by some, has finally come to be accepted by practically all pediatrists. I believe it is not an over-statement to say that he was the founder of modern scientific infant feeding.

The two great interests of Dr. Rotch's life were the development and organization of the pediatric department of the medical school, and the development and completion of the Infants' Hospital. He displayed marked ability as an organizer; and those of us whom he drew around him could not but catch his enthusiasm. We never ceased to wonder at his energy, and his capacity for the regulation of the smallest details. It was difficult to help him in his work, for he wanted to do everything and attend to everything himself. He never laid aside these interests, even in his last illness, and indeed died in harness. During the last days of his life, it was in vain we tried to persuade him to leave the management of things to others. Every day I had to give him a full account of "how everything was going," and it was difficult to persuade him that anything had been attended to without him. Only a few days before his death, at a time when we believed that at last he had resigned the management of the matters which interested him, and when any effort of mind or body seemed impossible, he insisted on telephoning from his bed to Dr. Morse about some small matter of departmental routine.

Dr. Rotch, early in his career, became convinced that the treatment of disease in early life was so distinct from that of disease in adults, that it could best be carried out in a hospital devoted exclusively to children. Later he found a marked difference in the hospital requirements of young infants and those of older children. The problem of nutrition in infancy was found to be of such great importance, that the nursing requirements for the carrying out of treatment are entirely different at that age, and that the conditions which a hospital for infants must meet are entirely different from those which prevail in a children's hospital. This led to the establishment of the Infants' Hospital, in its modest quarters on Blossom Street. It was the first hospital in this country to admit patients restricted to the first two years of life. Only those who have worked at the old Infants' Hospital can realize the enormous life-saving work which was carried out there under very inadequate conditions.

In 1902, Dr. Rotch's life was saddened by the death of his only son, who had just graduated from the University, and begun a business career. Tom Rotch, as the boy was known to his friends, had not been strong as a baby, and had indeed presented one of those very problems in which Dr. Rotch later took so strong an interest. I know that it was the study of his early life that first led Dr. Rotch's interest into the field in which he later attained so great a reputation. While Dr. Rotch never recovered from the blow of his boy's death, his finest qualities were never better shown than by the way in which he bore this bereavement. He surrounded himself with the college friends of his son, and threw himself with all the more energy into his professional work.

Dr. Rotch had many friends, and was greatly beloved by his patients. In the outburst of sympathy for him in his loss, a fund was given by his friends for the erection of a new infants' hospital as a memorial to his son. This movement has just ended in the completion of the new building near the Medical School.

Dr. Rotch had much to do with the development and administration of the Children's Hospital, but during the last years of his life it was in the new Infants' Hospital that his interests were centered. His plans were always far-reaching, he looked far ahead into the future. He possessed the imagination which could foresee the results of their fulfilment. I believe he was one of the first, if not the first, to foresee the group of buildings now surrounding the Medical School. He talked to me of this idea long before I ever heard it mentioned anywhere else. The one dream of his life was to see the new Infants' Hospital completed and opened, and to deliver the first lecture in its lecture room. After this his plan was to retire from all his other professional activities, and to devote the rest of his life to literary work, and to the management of the new hospital. It was in the director's room of the new building that he intended to pass his remaining years.

It is rather tragic that his hopes failed of fulfilment at the last moment. During his last years he overworked continually. The severe strain imposed by the hopeless illness of his wife for four years was more than even his strong constitution could bear. He felt his strength failing, but did not say a word of this to anyone. To our anxious inquiries he always replied that he was feeling better. He concentrated all his energies on finishing his work, on seeing the new hospital completed, and on perfecting the organizing of his teaching department. The first acute breakdown occurred early in February, but he was soon up, and no one could restrain him from going to work again. His final illness began on February 24th, and a collapse on February 28th showed his condition to be hopeless. The new hospital received its first patient on March 3d, six days before his death. Although he failed to see the hospital open, I believe he was very happy at the last, for the building was so nearly completed that he had begun to realize the satisfaction of seeing his hopes fulfilled.

III.

Charles Pickering Putnam, M.D.

By William Bradford Robbins, M.D., Boston,

Dr. Charles Pickering Putnam has taken a prominent part in medicine in Boston in the past forty years. During this time we all have come in contact with him in some way or other. We remember him for some particular trait or act or deed. He will be generally known for the great work which he did, in what might be called *social* medicine. His life work may be said to have been to uplift the human race, to make his fellowbeings happier and better in mind and body. He laid down his life for his friends, and his friends were *us* all.

He believed that the greatest good could be accomplished by organization, and therefore we find him a leader in many societies, which have to deal with social and moral uplift. He was one of the founders of the Boston Society for the Relief of Destitute Mothers and Infants, and was its president from 1904 until his death. Since 1875 he had been connected with the Massachusetts Infant Asylum as physician, and for twelve years was president of the board of trustees of that institution. He was one of the earliest to become interested in the Associated Charities, and it was largely through his efforts that the society is now able to accomplish so much.

He was very active in the reorganization of the Boston pauper institutions. To quote from Mr. Joseph Lee's article:

"From 1892 to 1897 Dr. Putnam took a leading part in the very important movement for the reorganization of the Boston institutions for the care of prisoners, of the poor, and of poor, neglected and delinquent children, being on the special committee appointed by Mayor Matthews in 1892, chairman of the board of visitors of 1893-94, chairman of the standing committee on pauper institutions of the advisory board appointed by Mayor Quincy in 1896, a steady fighter for the reorganization bill of 1897. When the new system of separate unpaid boards of trustees was established he was appointed a member of the board of children's institutions, and was its chairman from 1902 to 1911, performing in that capacity a great and harassing, though invisible and unappreciated, service to his fellow-citizens.

"Dr. Putnam was among the earliest supporters of Dr. James R. Chadwick in founding the Boston Medical Library, of which he was an original member in 1875, an incorporator in 1877, and which he served upon important committees until his death. He helped to organize and carry on the Directory of Nurses. He was active in the campaign against tuberculosis and a director of the Mental Hygiene Association. He was one of the first to take up broad social questions from the legislative end, was the first experienced charity worker to enlist in the Massachusetts Civic League, and helped secure the establishment of the State Board of Insanity, the taking over of the Boston Insane Hospital by the state, medical inspection in the public schools of Massachusetts, playgrounds, better probation service, the juvenile court, better laws dealing with tramps, with drunkards, and many others."

Besides all these societies he was affiliated with many medical societies. He was president of the American Pediatric Society in 1898.

During all these years he attended assiduously to a large practise. He seemed never to tire, and no matter what time of the day or night he was called, he had always the same quiet thoughtful, calm, self-contained manner. No matter how busy he was, he seemed to have unlimited time to spend on the details of kindness, the little kindnesses which most leave undone or despise. He never appeared to be in a hurry, and left the impression that this visit was the only one he had to make. He seemed to know by instinct what would comfort most. I have seen him sit down on the floor of the nursery and work over some complicated toy for an hour at a time, so that in the morning when the sick child awoke he would find his toy all fixed and ready to be played with.

How much he loved the children was shown by the way the children loved him.

He had a great faith in therapeutics and his choice of drugs was adapted to suit the individual case with rare skill. He respected the idiosyncrasies of his patients, about drugs or other forms of treatment, but he was very firm when he knew that a certain course of treatment was essential. He was constantly studying to increase his knowledge of new drugs or new combinations of old drugs, which might give better results, or the same results in a less obnoxious manner.

His prescription books are filled with prescriptions which show his mastery of therapeutics.

With his keen sense of humor and kind heart he frequently accomplished what no medicine would do. When the case required some mechanical assistance, he was never at a loss. With the most crude home-made materials he would construct a complex apparatus. He was a born mechanic, and loved to work in his workshop over some useful article, seldom for himself. His office contained many simple and complicated devices to relieve pain and correct deformities. When in his last illness it caused him pain to lie down, he had a wonderful apparatus rigged up under his direction to support himself, an apparatus which he had devised to help one of his friends in a like predicament. I think that if he had had more time for the training and his eyesight had been better, he would have taken up surgery, he was so skilful with his hands.

One of the most striking of Dr. Putnam's traits was his pertinacity. No matter how difficult or apparently impossible the task seemed, he would never give up or be discouraged. I shall never forget the care and patience with which he worked over the case of a young mother who was bent on nursing her child. With an earlier baby the nursing had been intercepted by a breast abscess, and it appeared as if it were impossible to prevent the same thing happening again. The mother was disconsolate. He said that he believed that it was safe to go on nursing. He tried breast bandages, shields of all kinds, made an improved breast pump, and finally succeeded in quieting the inflammation and the nursing went on.

His resources seemed endless either for a broken toy or a broken heart.

Not content with giving so much time to the poor and the needy through his societies, he took the problems of all who came to him as his own. Rich or poor, their problems were his. He believed in organized charity but he gave his life to his own personal charity. The friend to the friendless and helpless, his office was filled with those who needed help or advice, for they knew that they would get an honest opinion, a kind word, a true friend, a helping hand if they came to him.

During his last illness I saw some of the cases that came to his office looking for their friend, I found a young girl whom he had talked to daily, for weeks, to encourage her in the work that she was doing; an old woman whose pills had given out, who said she came for more pills, but who really came to see him; young girls from his societies, who had practically no other friend in the world; and the tired mother of some six or eight children, who came to ask advice about her family troubles. He had seen them all for love.

He was young in his heart, and in his mind, and in his body. He often joked with me because I called a person old. "Why," he said "they're not much older than I am, and I'm not old!"

He was by inheritance a gentleman and a gentle—man, in the truest sense of the word, he lived. What his forbears have done for Boston is well known.

All that he did we cannot yet fully realize. Descended from great physicians on both sides of his family, he inherited a love of medicine, and a wonderfully keen medical sense, and he also inherited from them a love of service to the people.

Dr. Putnam will be known for his great work for social progress and social medicine, but we shall remember him for his persistent self-sacrifice in his daily work.

Thoughtful of his patients to the last, it was with difficulty that we could get him to discontinue the use of two telephones in his sick room. He knew that he could not get better, but there were few if any, who guessed it, when they heard his cheering words to them.

His last thought was for those he loved—his fellowmen.

Original Articles.

COMPENSATORY EXERCISES AS AN AID IN THE TREATMENT OF LOCOMOTOR ATAXIA.

BY H. M. SWIFT, M.D., PORTLAND, ME.

IN considering the treatment of locomotor ataxia it should be remembered that we are dealing with a clinical condition resulting chiefly from a degenerative lesion of the nervous system. The seat of this degeneration is in the fibres of the posterior nerve roots and their prolongations into the spinal cord, the regions of the cord which are affected most strikingly being the posterior columns, perhaps more familiarly known as the columns of Goll and Burdach.

The principal function of the nerve fibres which pass upward in the posterior columns is the transmission of impulses which convey the sense of position to the brain and lower centres. So, if, for example, the fibres in the posterior columns which transmit these sensory impulses from the legs are destroyed, the patient is unable with closed eyes to know accurately the position in which the limb or segment of limb is placed if held flexed or extended at any of the joints.

The loss of position sense in ataxic cases may be often easily demonstrated by bending the great toe up or down and asking the patient to tell with closed eyes the position in which it is held. Usually if much ataxia is present this cannot be done correctly, although in the early stages before much ataxia has developed the test may be negative.

Inasmuch as in locomotor ataxia the motor pathways are generally intact, there may be no actual loss of power, and strictly voluntary movements can be carried out. It must be understood, however, that no exact movement is entirely voluntary or consists merely in the contraction of one set of muscles, but that exactness is made possible only through the regulatory or inhibitory influences of co-working or opposing muscles whereby the muscles concerned are made to work in harmony and the component movement rendered steady.

This regulatory action is largely involuntary and is made possible by the fact that afferent impulses or messages are being continually sent in from the joints to the central nervous system, which inform the spinal regulatory or coördinating centres of the exact position of the limb during the various periods of time covered by any of its movements, while the centre in turn sends back regulatory motor impulses to the different sets of muscles involved so that the total result is a coördinated movement. But if now, as in locomotor ataxia, the pathways for position sense are destroyed, then the production of regulatory impulses is prevented or at least impaired, and the result is unsteadiness or overaction of muscular movement—in other words, incoördination.

To illustrate what is meant by the regulatory influence of associated movements let us consider the act of standing.

In normal standing the knees are not held ordinarily in a position of stiff and complete extension, but rather slightly flexed so that unless prevented there would be a tendency for them to sink down and give way under the body weight. Normally this giving way is prevented by the fact that whenever the knees tend to bend under the body weight, unconscious sensory impulses are sent in to the coördinating centres of the cord, indicating that a faulty position is being assumed, and are there converted into motor regulatory impulses, which in turn cause appropriate opposing contractions of the quadriceps. In this way the exact amount of extension requisite to normal standing is maintained. But when, as in advanced tabes, this regulatory function is interfered with and the tendency to sink down under the body weight is unopposed, the standing position is not so easily maintained and the patient must resort usually to rigid hyper-extension at the knees in order to prevent them from giving way.

Again, in walking the same principle is involved. Walking is made up of a number of nicely adjusted component movements. In describing this act the legs may be designated conveniently as the supporting leg and the swinging leg. At the beginning of a step one leg is swung forward, while the body weight is supported by the other leg; but soon after the swinging movement is begun the body weight is transferred from the supporting leg to the swinging leg, the transference being complete as soon as the swinging leg is firmly fixed upon the floor.

This transference of the body weight from one leg to the other is brought about by the plantar flexion of the foot of the supporting leg (now remaining in the rear) which rising in this manner throws forward the body weight upon the leg in front. The latter in its turn now becomes the supporting leg. The other leg in the rear is then ready for the forward swing which goes to make the next step.

In order that the act of walking be properly performed these various movements must be executed with perfect steadiness and accuracy. For example, when the weight is thrown forward from one leg to the other, it is necessary that the foot be raised exactly to the proper position and no further, because if the heel is raised too high the body weight is brought forward so far that the person loses his balance and tends to fall over. Normally this exaggerated movement is prevented because through the afferent nervous impulses one is made aware unconsciously of the exact position of the ankle joint during each instant of the act, and when the plantar flexion has been sufficiently carried out a message to that effect is sent to the cord along the fibres of position sense, which is there transformed into motor impulses to the opposing muscles (peroneals, tibialis anticus, and extensor longus digitorum). In this way the movement is kept within proper bounds. When, as in locomotor ataxia, this sensory pathway is destroyed, such a message cannot be sent to the muscles which normally would inhibit too great a plantar flexion, and when this movement is attempted the result is an exaggerated flexion with accompanying difficulties of locomotion, instead of a regulated flexion, as in normal walking. In locomotor ataxia the ability to transfer properly the body weight from one leg to the other is often lost and is particularly difficult to re-acquire.

Ataxia is thus seen to be dependent upon degenerative changes in the nerve tissue whereby the position sense is destroyed or impaired. It is probable, however, that associated with these degenerative changes is sometimes a more active irritative or inflammatory process in the spinal meninges, which gives rise to the pains and various crises by causing a constriction about the posterior roots as they pass through the pia enveloping the cord.

While it can hardly be definitely proven that the pains and crises are caused by irritation of the posterior roots by an acute process, therapeutic evidence of this is suggested by the fact that particularly in those cases with predominating pains the administration of salvarsan is most likely to prove of value. It is now considered proper by many to give salvarsan in all cases of tabes, and there would seem to be no doubt that a certain proportion of these cases are improved and in others the process at least checked. But we cannot hope that salvarsan or any other medicinal agent will bring about the restoration of nerve tissue, which has actually undergone degeneration, any more than we can expect that a kidney which is the seat of a chronic nephritis can be made normal again.*

Now let us suppose a case in which salvarsan has been given, the acute process checked with relief of pains, but in which a considerable degree of ataxia still remains. Can anything more be done? It seems to me that the situation here is not unlike that in the case of the degenerated kidney; for in the latter condition we try to bring about compensation by making the skin and bowels take up a part of the work of elimination, and on somewhat the same principle in locomotor ataxia we may utilize the intact sensory fibres of other regions of the cord to take up the work which normally belongs to the posterior columns. Here, however, the analogy between the degenerated nerve tracts and the degenerated kidney ends, inasmuch as in the case of the diseased kidney we have in the skin and bowels compensatory agents ready at hand, while in the tabetic the compensatory function must be developed slowly by a process of reeducation.

The method employed to bring about this improvement in function consists in the use of compensatory exercise treatment devised by Frankel, of Heiden, in 1882, and later modified by Foerster, of Breslau, the aim of which is to overcome the ataxia by training the eye and equilibrium sense to compensate for the lost position sense, and eventually to redevelop the position sense itself by increasing the capacity of the fibres in the posterior columns which have escaped degeneration.

In the original Frankel exercises more or less apparatus is used and the patient practices various movements requiring great exactitude in execution, such as putting the feet into small depressions in a board or touching in succession with the feet swinging wooden balls, the idea being that the coördinating ability acquired in this way will increase the efficiency of the whole motor system, including of course the acts of standing, walking, etc. It has been found, however, that improvement in standing and walking is not particularly hastened by these complicated exercises, but that the tabetic learns walking best by practicing walking, the standing by practicing standing. The employment of those other refinements is thus unnecessary.

In the Foerster modifications these more elaborate measures are omitted, and, instead, the motor disturbances seen in walking, standing, etc., are analyzed into their component parts and the patient taught to correct each of these elemental inaccuracies by a process of voluntary attention.

I shall now attempt to describe some of the details of treatment.

WALKING.

By way of preliminary I would say that my analysis of the tabetic gait is not intended to be complete and that I have chosen merely four important abnormalities in order to illustrate the methods used for correcting them. These abnormalities are:—

1. *Hyperextension at knees.*
2. *Overaction of swinging leg with exaggerated dorsal flexion of foot.*
3. *Lack of plantar flexion of foot of supporting leg to throw the body weight forward.*
4. *Faulty position of hips with corresponding faulty posture of trunk.*

These defects vary considerably in different cases.

Hyperextension at knees. In normal walking and standing the legs are held in a position of slight flexion at the knees. In this position there is naturally a tendency to sink down under the body weight which is corrected by means of unconscious sensory impulses, which are transformed into reflex motor impulses and cause appropriate contractions of the quadriceps muscles, thereby maintaining the necessary opposing extension. In this way, by the unconscious interplay between the actions of the quadriceps and hamstring groups the exact amount of bending at the knees is maintained which is requisite to the normal walk. In tabes, on the other hand, owing to this lack of finer adjustment by means of the position sense, the tendency for the legs to give way can be prevented only by keeping them in a state of stiff and complete extension. In other words, the patient walks stiff-legged, using his legs somewhat as a pair of pegs after the manner of an automaton.

This adjustment is to a certain extent conservative, and it may be inadvisable to try to correct it during the earlier stages of treatment. Later the patient may practice slowly the movement of sinking and rising at the knees, always watching himself carefully and exerting himself most strenuously to avoid all jerks. This exercise is usually very fatiguing and at first it may be necessary partially to support the patient. Standing also may be practiced with the knees in a partially flexed position.

Further measures tending to correct this defect are included under other exercises mentioned later.

Overaction of the swinging leg with dorsal flexion of foot. Owing to the lack of inhibition on the part of the opposing muscles, the leg is swung forward with a jerk. The foot is held stiffly in a position of dorsal flexion and the heel strikes the floor with a thump.

---

* The Wassermann reaction and the examination of the spinal fluid are valuable aids in judging as to the probable efficiency of salvarsan treatment. For details as to this see papers by Spooner and Ayer, BOSTON MED. AND SURG. JOUR., Vol. clxx, No. 18.
Also, "Serology of Nervous and Mental Diseases," Kaplan.

To correct these defects the patient practises walking with the leg sharply flexed at the knee and with the foot pointing downward in exaggerated plantar flexion, thus touching the floor first with the toe and then coming down gradually on the whole foot. The proper motion in this exercise resembles that of the fore legs of a horse drawing a load up hill. The exercise is to be practiced slowly, aiming at perfect steadiness and carefully trying to avoid jerkiness. At the beginning of the movement the foot often leaves the floor with a little twist and this tendency should be perseveringly combated. In the majority of cases the foot is usually best held pointing directly forward, thereby correcting the frequent tendency toward extreme outward rotation. Whatever position is chosen for the foot it should not be allowed to deviate from that line.

Exactitude may be aided if chalk marks or painted spots are made upon the floor corresponding to the shape of the foot and in the exercises the toe be put down exactly upon the indicated places, the patient always endeavoring to correct with constant and painstaking attention any tendency of the foot to swerve.

Lack of plantar flexion of supporting leg to throw the body weight forward. Normally in the act of taking a step the body weight is thrown forward by the rising up of the rear supporting foot into a position of plantar flexion. In tabes the foot of the supporting leg is not raised but tends rather to be merely pushed along, while the upper part of the body, instead of being thrown forward, inclines to fall backward. This defect is to be overcome by having the patient practice to throw the body weight forward by means of careful attention to the movements of the supporting foot.

In the exercises previously described the defects are corrected by training the eyes to watch the various movements and to correct abberations of movement as they are seen to occur. In the next defect of which I shall speak compensation is effected not alone by visual means, but also by the training of the equilibrium sense.

Faulty position of hips with corresponding faulty position of whole trunk. In the tabetic the hips tend to protrude on the side of the supporting leg which is the opposite of the normal walk, and the balance is maintained with difficulty when the swinging leg is in the air. There is thus a tendency to fall over toward the side away from the supporting leg, which the patient naturally tries to overcome by walking with a broad base and by turning the feet outward in an extreme degree. The problem here becomes one of training him to walk while keeping the hip held in on the side of the supporting leg, because when this is done the trunk bends over away from the unsupported side and the equilibrium is more easily maintained. The attainment of this correct position may be aided at first by the physician's pushing in against the trochanters of the patient as he walks. Another defect in advanced cases is the tendency of the trunk to bend over forward, which is to be corrected by keeping the buttocks forward and this again may be aided by pushes or slight taps against the sacral region from behind. By such measures the patient may gradually learn to hold the hips in the proper position.

The tendency to fall in any direction may be in part corrected by developing the equilibrium sense so that it learns to respond more quickly than normally. Have the patient notice his tendency to topple over can be overcome in a measure by quickly pushing out the pelvis along the line in which he feels himself falling. Associated with this movement is a compensatory bending of the upper part of the trunk to the other side so that the balance may also be maintained by simply leaning in the opposite direction. This is, of course, the same principle by which the balance is maintained in the normal individual. Normally this maintenance of equilibrium is involuntary and conditioned by unconscious sensory impulses. In tabes these involuntary nervous processes must be supplemented by balancing motions which are more strictly voluntary and may be made to act as compensatory to the lost position sense.

It may have been noted that in some of the exercises the legs are in a position of over-correction, as when, for example, the swinging leg is held strongly flexed at the knee with the foot pointing sharply downward, thus over-correcting the natural tabetic tendency to walk with legs stiffly extended and with feet turned upward. The aim of this over-correcture is to obtain as a total result an approach to a normal walk in which the position of the limb is midway between the extreme position naturally adopted by the tabetic, and the extreme position of the exercise.

If necessary, the exercises may be practiced by aid of the support of another person; then successively with sticks, without sticks; and finally with closed eyes, the difficulty of the task being increased as fast as the progress of the case permits.

In the foregoing description only some of the more typical abnormalities have been considered the object being rather to illustrate a principle than to give an exhaustive description of all the exercise movements. The physician should always analyze carefully the defects of a given case and apply corrective procedures suited to the individual. With a trifling amount of ingenuity appropriate exercises may be easily devised. Care as to detail is imperative, and during the practice the attention of the patient is to be directed to the slightest inaccuracies.

After a certain amount of improvement in walking has been attained, more difficult coordinated acts may be tried, such as going up stairs (the body weight being kept well forward), then running, dancing and the like, the aim not being to acquire excellence in such accomplishments, but only to render easier the act of walking.

These exercises may be often advantageously combined with some of the original Frankel movements which are especially useful as a preliminary if the patient is bed ridden. In practicing them the patient rests in a half reclining position on a firm couch with the back against a support, so that he may watch all parts of the legs.

A description of the movements may be found in many text books, but for convenience some f them are given below:

Slowly raise and lower whole leg from table carefully avoiding all rotation of foot.

Slide foot back and forth in flexing knee. The heel rests upon the table and the foot is held in a position of plantar flexion.

Same as above until knee is flexed, then the foot is raised from the table and the leg extended. Attention that movement is without jerkiness, that foot remains flexed, and that the leg does not rotate.

Place heel upon knee of other leg, then half way between knee and ankle, upon ankle, upon great toe. Same precautions as above.

Slide heel of one foot up and down upon the tibia of other leg, keeping foot in plantar flexion and avoiding rotation.

All these exercises are to be practiced first with eyes open, then with eyes closed.

For cervical tabes with resulting incoördination of the hands appropriate exercises have also been devised.

STANDING.

In cases with far advanced ataxia standing is impossible, because the patient is unable to maintain extension either at the knees or at the hips. As a consequence of this the knees tend to give way and the trunk collapses over forward so that the person doubles up like a knife. In ordinary cases standing is possible, but rendered so only by rigid over-extension of the joints in question. Thus the trunk is bent over backward with corresponding protuberance of the abdomen, while the knee-joint is held stiffly hyper-extended. This hyper-extension of the knees and hips is in a measure conservative and in severe ataxia the patient may be allowed to retain this position during the early stages of treatment, inasmuch as the acquirement of the ability to stand in any manner whatsoever is a distinct gain and at the beginning this may be accomplished only with the maintenance of rigid over-extension, even this sometimes being impossible without the aid of support on both sides. While thus supported the patient must always be on the alert to combat the tendency to collapse by making voluntary extension of the muscles about the knees and pelvis, to do which it is necessary that he watch attentively the parts and make appropriate corrective movements whenever he sees himself giving way. Later as he becomes more and more proficient, the support should be gradually diminished and replaced by canes until eventually he becomes able to stand alone.

Where the ataxia is less extreme and the patient already able to stand without support the problem becomes one of tempering the rigidity of the extension by the cultivation of a certain degree of flexion of the opposing muscles. In such cases standing is to be practiced in a normally erect position, which will be somewhere between the backward over-extension of the trunk and the forward collapse. The knees are to be held slightly flexed as in the normal.

As in walking, so in standing, the equilibrium sense must also be developed and the patient learn to prevent himself from falling by pushing out the pelvis in the direction toward which he feels himself swaying. The use of the equilibrium sense is particularly valuable when he comes to practice standing with closed eyes.

After the patient has learned to stand reasonably well without support of any kind the difficulty of the exercise should be increased by having him stand with the feet close together and then on one foot. Finally all the exercises are to be practiced with closed eyes, the aim being to rely less and less upon the visual and more and more upon the equilibrium sense.

At first all exercises are to be practiced for only short periods of time, with frequent intervals of rest, because, as should always be borne in mind, the tabetic may have no subjective feeling of fatigue and in his early enthusiasm easily overdo and carry the work to a point injurious to himself. To prevent this the physician should watch the pulse and if it becomes rapid at any time have the patient rest.

At the beginning of treatment half hour seances, including intervals of rest, are ordinarily long enough. Later the exercise periods may be lengthened. Patients often wish to practice at home and this may be permitted, provided they can be made to understand that the exercises may actually retard progress if carried to the point of fatigue. For home work it is perhaps safest to prescribe periods of five to ten minutes' practice, repeated after long intervals several times during the day. As a matter of fact, home practice does not hasten improvement as much as might be expected. To be most beneficial the exercises should be done under supervision, because slight inaccuracies requiring correction continually arise, which escape the notice of the patient.

To be of marked benefit the treatment must be continued over long periods of time, varying from six months to a year. The method is not suitable for all tabetics, the more common contra-indications being optic atrophy, a heart lesion, poor general physical condition, and frequent pains or crises. Nor can one say absolutely whether the exercises will be helpful in a given case. The fairest way perhaps is to propose to the prospective patient a few weeks' trial and if at the end of that time he is dissatisfied with his progress he may discontinue, although usually if the treatment is carried out even for this short period he becomes interested and willing to keep on.

In conclusion I would repeat that the compensatory exercise treatment is not suited to all cases of locomotor ataxia, and is to be combined with other measures directed to the improvement of the general health and often with anti-syphilitic medication.

LITERATURE.

Die analytische Methode der kompensatorischen Uebungsbehandlung bei der Tabes Dorsalis. O. Foerster. Deutsche medizinische Wochenschrift, 1913, Nos. 1, 2 and 3.

DIABETES AND SURGERY.

By Edward H. Risley, M.D., F.A.C.S., Boston,

Assistant Surgeon to Out-Patients, Massachusetts General Hospital.

This paper has for its object a brief summary of our present-day knowledge in regard to glycosuria in its relation to surgery.

1. In what type of cases must we avoid surgery in diabetics?
2. What is the probable mortality from operations on diabetics?
3. Is the amount of sugar of prognostic value?

The statement made in most text-books that all but emergency operations should be avoided on diabetics and that there should be a very guarded prognosis, does not seem in the light of present surgical technic to be a warning that needs as serious attention as formerly.

The only way to reach a definite conclusion is to study the results that have been obtained after operations on diabetics and the causes of failure, in order to define the limits of surgical interference.

It is very often difficult or impossible to distinguish between temporary or non-diabetic glycosuria and true diabetes, this being notably so in the presence of surgical complications, and should we take the presence of sugar as an indication of the existence of diabetes in all cases there would be many patients who would die unrelieved of their surgical necessity.

Verneuil in 1884 said, "I hardly admit the separation, no one so far having shown clearly where glycosuria ends and diabetes begins. I have, in light of present-day facts, decided as a surgeon to discard the existence of an arbitrary division which does not present any practical utility. From the surgical point of view the presence of glucose in the urine, whatever its amount, is always a serious fact."

The classification of Smith and Durham (Guy's Hospital Report, Vol. xlix, pp. 343-432) seems to more nearly approach completeness and practicability than others hithertofore given. This (somewhat modified) is as follows: Our cases can be divided and more accurately studied if we class them as:—

1. Those cases in which glycosuria is caused by the surgical lesion.
2. Those cases in which it causes the surgical condition.
3. Those cases in which the two are independent and do not influence each other.
4. Those cases in which glycosuria is a harmful factor and adds to the danger of the already present disease or injury.

We must bear in mind in analyzing these cases that glycosuria may be transitory, *i.e.* due to the use of drugs such as morphia, or it may be the beginning of a true diabetes, the one passing imperceptibly into the other.

Class 1. Glycosuria is not uncommonly caused by the surgical lesion in cases of injury and sepsis. The amount of sugar is generally small (1 to 2.5%) and usually transitory. In ulcerated new growths the glycosuria is probably secondary to the sepsis present. Smith and Durham (*vide* above) instance several cases in which a gradual disappearance of sugar took place after the removal of a sloughing malignant growth. There are many instance in the literature in which glycosuria cleared up subsequent to operations for appendicitis, pyosalpinx, strangulated hernia, ovarian tumors, traumatic gangrene, etc. In such cases, therefore, surgery is indicated and demanded both in light of results obtained and the nature of the surgical lesion.

It may be argued that it is impossible to tell before operation whether the condition is one of transient glycosuria, dependent on the surgical lesion, or whether it be a true diabetes. This is a proper question to raise. But it has its answer in the surgical necessity of the cases and the low mortality statistics resulting from present-day technic.

Class 2. Phillips (*Lancet*, May 10-17, 1902) has written the most careful recent review of the cases reported in the literature on this subject. He thinks it doubtful whether diabetes can directly cause any lesion requiring surgical treatment except balanoposthitis and cataract. His belief in regard to so-called diabetic gangrene is that it is rather a gangrene occurring in a diabetic subject, the influence of the diabetes being indirect through the coincident arteriosclerosis or nerve degeneration, these being the result of the constitutional affection. Carbuncle, he believes, is to be regarded in the same light.

Should we differ from this opinion, we may regard diabetes as a direct cause of the surgical condition and therefore demanding surgical intervention. Mortality from operation in this class of cases is notably high but has been greatly lowered in recent years by the use of newer forms of anesthesia, such as nitrous oxide and oxygen, local and spinal anesthesia to replace the more toxic chloroform and ether, rapid aseptic technic and careful pre-operative treatment aimed at the reduction of sugar.

Exact mortality figures in this type of cases are not at present available but it is possible to state that the risk of operation is justifiable provided the general condition of the patient and the diabetes can be first improved by preliminary treatment.

Class 3. This from the point of view of surgical prognosis and treatment is in a way the most important group, as it contains new growths, fractures and other injuries, such as genital injuries following childbirth, occurring in diabetics, and especially because the existence of the diabetes may at the time of the surgical emergency be unknown, as the disease may be intermittent.

Phillips has analyzed the results of operations on the face and mouth for malignancy in the presence of diabetes, and finds out of 16 cases 11 recovered, or 68.75% recoveries and 31.25% mortality. Of purely mouth and lip cases, 9 out of 12, or 75% recoveries.

In operations on the breast, of 15 cases 13, or 86.6%, recovered and 13.4% died. Both fatal cases died as a result of sepsis; one of erysipelas and one of sepsis in the drainage tract. In operations on the female generative organs, out of 24 operations performed on 23 patients there are five deaths, or a percentage of 76.25 patients recovering, and of successful operations 79.16%. In purely plastic operations the mortality was practically nil.

The results reported in operations on the male generative organs are very meagre. Of 6 operations on 5 patients, 3 died, giving an operative mortality of 50%. No special precautions had been taken in two cases against coma and the other was in the removal of a septic sloughing penis. Mortality statistics in this class of cases are probably much better than the figures indicate.

When we consider abdominal operations including hernia, appendicitis, colostomy for malignant disease, we find in 15 operations on 15 patients, 11 recoveries or 73.3%. This is a low percentage of recoveries as three of the cases in this series were practically moribund when operated. Three pancreatic cysts in diabetics have been drained, the patients recovering from the immediate effects of operation, but dying subsequently of diabetes some months later.

In operations on the extremities for aneurysm, neoplasm, crush, fracture, etc., 7 cases showed 3 deaths or 57.1% recoveries, 9 operations being done, gives a percentage of successful operations of 66.6.

The discussion of the question of the non-union of fractures in diabetics is an interesting one. Text-books teach non or delayed union to be expected. Smith and Durham report 5 cases of non and delayed union in 9 cases, the 4 other cases having perfect union within normal time. Phillips cites numerous cases of perfect union and believes that considerable doubt should be expressed that non-union is more common. Van Norden's (Pathologie des Stoffwechsels, Berlin, 1893, s. 416) observation on the decrease of lime salts in diabetes would indicate that it was advisable to administer the carbonate of lime to diabetics suffering fractures.

It seems evident, therefore, that we may generally expect union of fractures in diabetics, especially if we take the precaution to administer lime salts during convalescence.

Class 4. The question of gangrene and the results of amputation for that condition are interesting. It is beginning, at least, to be accepted today that diabetes is rarely the direct cause of gangrene, but rather it is to be considered secondary to arteriosclerosis in diabetics. The term diabetic gangrene is usually applied to gangrene of the lower extremities. A vast amount of literature has been published on this subject and the subject is further complicated by the fact that ordinarily senile gangrene is often accompanied by glycosuria. The best treatise on this subject is by Gussenbauer (Uber die Behandlung der Gangrän der Diabetes Mellitus. *Wiener Klinische Wochenschrift,* 1895, Band xlii, s. 487). He advocates diet and general treatment first. The condition of the arteries on both sides should be carefully investigated. If the pulse be distinctly present in the anterior and posterior tibial and in the dorsalis pedis, local removal of the diseased parts will suffice. If, however, the pulse be absent there, but be well marked in the popliteal, amputation below the knee may be performed provided the gangrene has not spread beyond the dorsum of the foot and that the leg is free from phlebitis and lymphangitis. Otherwise, amputation must be done through the thigh. If in doubt, amputation should always be done above the knee. St. Bartholomew's Hospital Reports for 1884-1899 emphasize the importance of observing the above directions of Gussenbauer, for out of 8 cases amputated for gangrene and done below the knee in the absence of dorsalis pulsation 6, or 75%, died.

Albuminuria is a serious complication. In Phillips' series all cases having it died. The presence of acetone or diacetic acid and an increase in the amount of ammonia excreted is of the utmost significance, and if these are found to be irreducible the prognosis is bad.

The old idea was prevalent that diabetes exerts an unfavorable influence on the per primam healing of wounds, but this apart from sepsis, does not necessarily follow. Perhaps it is well to make the guarded statement that with preliminary treatment of the diabetes before operation good results may be expected in the healing of wounds, but bad in untreated cases.

The question of the result of dietary treatment before operation on prognosis is of utmost importance. In Phillips' large series there were 82.3% of recoveries in treated patients and 63.63% in untreated cases, a difference in favor of careful preliminary treatment of 18.66%. These facts are significant enough to be impressive.

Diabetes and sepsis: Extensive experiments by Bujund, Nicholas, and Karlinski show that sugar diminishes the virulence of microörganisms but increases their pus-producing properties. The factor of sepsis is therefore largely influenced by lowered vitality produced by the circulation of an abnormal amount of sugar, the presence of arteriosclerosis and of nerve degeneration producing trophic changes. Sugar directly lowers the vitality of the tissues and indirectly induces chronic vascular changes, both of which are exceedingly favorable to the development of sepsis.

Sepsis, on the other hand, may produce a temporary glycosuria, but nevertheless, this may later be found to be evidence of a diabetes which was quiescent and lighted up by the disturbance to the system incident to operation.

An interesting phase of this subject and one scarcely ever spoken of except by foreign surgeons, is otitis media and mastoid involvement in diabetes. Kuhn, Raynaud and Wolf consider that there is a special form of diabetes in which mastoid symptoms predominate. Frederick explains this by the fact that the mastoid condition is due to the existence of arteriosclerosis. Of 50 cases collected and reported by these authors, 17 developed acute mastoid disease, 11 developed slight mastoid symptoms and 22 had none at all: a percentage of 56 with mastoid involvement. This condition is not surprising when it is considered how often sepsis thrives in the presence of diabetes. Extensive deep cellulitis of the neck is liable to follow mastoid operation. This should by no means contraindicate operation however.

The following rules may be laid down in regard to operations on diabetics:—

(*a*) A thorough examination of the urine must be made in every case, especially for the detection of acetone and diacetic acid.

(*b*) The total amount of ammonia must always be estimated. No operation except of the extremest emergency should be performed if there is one gram of ammonia excreted in 24 hours, until this has been reduced to the normal amount, .75.9 gm.

(*c*) An operation should be postponed should there be acetone or diacetic acid, even if the amount of ammonia is normal.

(*d*) Much albumen in the urine is a contraindication to operation and even in small amounts is of bad prognostic import.

From a review of the foregoing data it will be seen that most of the major operations of surgery have been and can be performed with success on diabetics.

In Phillips' extensive series gathered from the literature the percentage of recoveries was 72.28, or a mortality of 27.72%. This, at first glance, seems a large mortality, but when the seriousness of the condition and the poor condition of some of the patients operated on is considered, this is not a high, but a very fair mortality. When such cases as strangulated hernia, extensive malignant disease and sepsis, which in themselves give high mortality, are omitted, we may expect a reasonably low death-rate, and general good results in this class of cases. The percentage of sugar is no criterion, as fatal results have followed from coma when sugar was temporarily absent and cases with large amounts of sugar have often recovered.

The presence of glycosuria should never deter the surgeon from performing any operation of emergency.

Other cases should not be operated in which acetone, diacetic acid and ammonia cannot be reduced by preliminary treatment.

A mortality of 20 to 30% is to be expected in this class of cases.

The use of an anesthetic other than ether and chloroform, careful dietary treatment before operation, the prevention of sepsis and rapid technic will still further reduce the mortality.

THE DIFFERENTIATION OF HUMAN AND COWS' MILK BY COLOR TESTS.

By Richard S. Eustis, M.D., Boston.

At the suggestion of Dr. Fritz B. Talbot I have investigated several comparatively new reactions for the easy identification of cows' milk and human milk. Two of these depend upon the well-known fact that breast milk is normally less acid than cows' milk. The range of acidity falls within the field covered by the color changes of neutral red, which is an indicator changing from red in acid to yellow in alkaline solution. However, the normal colors of red and yellow are obscured by the white opacity of the milk, so that fresh cows' milk becomes a deep strawberry red and breast milk a duller, brownish or brick red. Furthermore, if ether is added in the proportion of five to one, the cows' milk remains deep red with the supernatant ether slightly red, while the breast milk becomes a pale orange with the ether yellow instead of red.

Moro[1] has described the first part of this test and determined that it is due to the reaction of the milk. For instance, fresh breast milk kept at room temperature gradually becomes acid. Before any change can be detected by smell or taste, the color with neutral red loses its brownish hue and soon becomes a strawberry red, indistinguishable from that due to cows' milk. Also, as Bauer[2] has stated, it is no longer decolorized by shaking with ether. I have found this change to be a gradual one with no definite end point. Bauer gives 38 hours as the limit of time which breast milk can be kept at room temperature before giving the cows' milk reaction." According to my tests the change of color had progressed far enough to be detected in 18-24 hours, and at the same time the milk acquired the power of retaining its color in the presence of ether. If the milk is kept on ice, however, the development of acidity is much slower and the change to the "cows' milk reaction" is correspondingly delayed. I have found a normal "breast milk reaction" in such milk 48 hours after the collection, and undoubtedly if greater care had been taken in the bottling it would have lasted still longer.

Neutral red, although primarily a colorimetric indicator, is also a stain, and if a drop of fresh milk is mixed with it on a slide, then warmed and examined under the microscope, the neutral fat droplets will be found colored yellow. The casein masses which appear as a result of warming, are red. The action of heat is necessary to make the stain penetrate the fat droplets, and even then many of them will remain unstained. As the milk ages the neutral fat gradually changes to fatty acid and stains red. Thus this microscopic method can be used as a check on the test tube method, but is rather too delicate as fresh drawn breast milk will show a few red droplets after it has stood one hour at room temperature. Cows' milk invariably contained some red droplets by the time it reached the laboratory.

A second stain which may be used in much the same way is Nile blue sulphate. This is not a colorimetric indicator like neutral red, but is a blue staining oxazine base, which in aqueous solution is partly oxidized into a red oxazone. The blue base does not stain neutral fat but does unite with fatty acids to form a blue soap. The red oxazone is soluble in all liquid fat, whether neutral or acid, and stains the droplets red. The blue stain of the base, however, is stronger than the red oxazone, so that fatty acids appear blue and neutral fats red. Furthermore, the red oxazone is soluble in ether and can be extracted by it from a watery solution. The oxazine base retains its blue color in the presence of ether only when the reaction is acid. If an alkali is added it turns white, only to regain its color again on the addition of an excess of acid.

Friedenthal[3] in 1911 used this stain in aqueous solution to tell whether a suspected milk fat contained pure neutral fat or whether it had partly changed to fatty acid.

Bauer[2] in 1912 discovered a difference in behavior toward this dye of breast milk and cows' milk. One drop of a 0.25% aqueous solution of Nile blue sulphate colors 2-3 c.c. of breast milk a deep blue, but the same amount of cows' milk a lighter robin's egg blue. The two colors are very distinct and cannot be confused.

This difference in color, however, does not depend on the reaction of the milk, but solely on the percentage of casein. For instance, the green blue color of cows' milk is given equally by skimmed milk, whole milk, and 32% cream. The blue of breast milk appears also regardless of the amount of fat. But 32% cream diluted with water until the fat is 4% and the casein 0.4%, gives a blue color indistinguishable from that due to breast milk. Furthermore, if the milk is curdled by warming, the casein masses are seen under the microscope to stain green. They are much more numerous in the cows' than in breast milk.

The reaction of the milk has nothing to do with the greenish color. Thus, cows' milk made slightly alkaline with soda bicarbonate still turns green with Nile blue, and breast milk made slightly acid with diluted sulphuric acid still turns blue. The behavior of the two milks when shaken with ether is, however, entirely dependent on the reaction, as the following table shows.

	NILE BLUE	AFTER SHAKING WITH ETHER	
		MILK	ETHER
Soda bicarb. solution	Blue	Colorless	Reddish yellow
Dilute sulphuric acid	Blue	Blue	Pink
Fresh cow's milk	Greenish blue	Greenish blue	Pink
Fresh cow's milk, soda bicarb.	Greenish blue	White	Reddish yellow
Fresh breast milk	Blue	Bluish white	Reddish yellow
Fresh breast milk, suphuric acid	Blue	Blue	Pink

Inasmuch as the power to decolorize with ether is directly dependent on the alkalinity of the fluid, this test also may be used as a means of judging the age of breast milk. It is of about the same value as the test with neutral red, both showing a change after the milk has been kept about 24 hours at room temperature, or 48-72 hours on ice.

If a drop of fresh milk, either cows' or human, is warmed on a slide with a drop of Nile blue and examined under the microscope, no blue droplets are seen, the great majority are reddish, while a few are unstained. As the milk ages and the neutral fats begin to change to fatty acids, blue droplets appear and increase rapidly in numbers, while others take all sorts of intermediate hues between red and blue. Finally, in sour milk, all the droplets stain blue.

In practice the two tests are used as follows: to 1—2 c.c. of the milk in a test tube is added 1 drop of a 1% solution of neutral red. A reddish brown color denotes fresh, "usable" breast milk, a strawberry red cows' milk or sour breast milk. If the milk is then shaken with five times its volume of ether, a fresh breast milk will decolorize, cows' milk or sour milk will not. A precisely similar test may be carried out with ¼% aqueous solution of Nile blue, except that breast milk colors blue no matter how old, and cows' milk greenish blue. Hence for determining whether a given milk is human or cows' the Nile blue is the better test, and is delicate enough to detect 1 part of cows' milk in 9 parts of breast milk, provided that there is known breast milk present for comparison. For detecting the age or usability of known breast milk there is little choice between the two.

With neutral red there is a change in color, and ether does not decolorize the fluid, after 18°—24° at room temperature, or 48°—72° on ice, depending upon the care with which it has been collected and bottled. Nile blue always remains blue, but loses its ability to decolorize with ether at about the same time. The microscopic test may be used as a check upon the test tube method but is not to be depended on by itself as the chemical change from neutral fat to fatty acid proceeds too irregularly.

There is a third reaction for the separation of human and cows' milk which I have also tested. Engel and Turnau[4] in 1911 discovered a difference in the behavior of the urine of breast and of bottle-fed infants when it is warmed with a 2% silver nitrate solution. Both urines develop a white precipitate which in the urine of breast fed babies turns brown and then black. This reaction has been investigated by a number of others and is now thought to depend on the excess of chloride in cows' milk over human milk. Hence less chloride is excreted in the urine of breast-fed babies, and consequently after all the chloride available has been changed to silver chloride there is still a surplus of silver nitrate which is then acted upon by unknown reducing substances in the urine and changed to metallic silver.

Tugendreich[5] applied this same test directly to the milks and found a distinct difference in their behavior. If equal parts of breast milk and 2% silver nitrate solution are boiled together the mixture will take a rich café au lait color. Cows' milk gives only a dull brownish or sometimes a pale violet. This is probably also a chloride reaction depending for its color change on the action of reducing agents in the milk upon an excess of silver nitrate.

I have confirmed this reaction with a number of different breast milks and have always found their separation from cows' milk easy. Furthermore, I could detect the addition of one part of cows' milk to three parts of breast milk, provided that there was known breast milk at hand for comparison. Dilutions with smaller amounts of cows' milk gave uncertain results. As was to be expected, the age of the milk made no difference in the reaction. Hence, although Tugendreich's reaction is useful as far as it goes, it is not to be compared with either the neutral red or the Nile blue test in the amount of information to be obtained from it.

REFERENCES.

[1] Moro, E.: Münch. med. Wochenschr, 1912, 59, 2553.
[2] Bauer: Monatsschr. f. Kinderheilk., 1912-13, 11, 474.
[3] Friedenthal, Hans: Berl. klin. Wchnschr., 1911, No. 33, 1507.
[4] Engel and Turnau: Berl. klin. Wchnschr., 1911, No. 48, 18.
[5] Tugendreich, G.: Berl. klin. Wchnschr., 1911, No. 48, 224.

RECOVERY FROM COCCIDIOIDAL GRANULOMA.

By S. B. Wolbach, M.D., Boston.

In response to a number of inquiries, by letter and indicated in published reviews of coccidioidal granuloma, the following brief notes are written concerning a case briefly reported by me in a study of the cultures in 1904. (*Journal of Medical Research*, Vol. XIII, No. 1.)

The case was one of coccidioidal granuloma as was proved by the pathological and cultural findings. It is hardly necessary in this day to go into the classification of this disease. Some confusion was introduced by Ricketts, (*Journal of Medical Research*, Vol. VI, No. 3). He brought together under the one heading "Oidiomycosis" a series of cases which we now know to be due to at least three different organisms, namely:—

(1) True blastomycosis or specifically, Torula infection. These cases have been extremely rare, and so far as I know none have been reported in man from this continent, with the possible exceptions of the two cases reported by Rust and Farnell (University of California publications in pathology, Vol. II, No. 5, June 21, 1912). Both of these cases terminated in meningitis and were classed as Oidiomycetic by the authors. From the appearance of the organisms, in the sections

sent to me and from the gelatinous character of the lesions due to zoöglia formation described by the authors, I am inclined to believe that these cases were true blastomycosis. In the absence of cultures it is of course impossible to be positive.

(2) Cutaneous and systemic blastomycosis, so-called, in which the organism reproduces in tissues by budding and in cultures has a mould-like growth. Under exceptional instances there may be growth by budding in cultures.

(3) Coccidioidal granuloma in which the organism grows in tissues by endogenous sporulation. On culture media it grows as a mould-like fungus, never by budding.

Blastomycosis, so-called, and coccidioidal granuloma have been reported almost exclusively from America. Over a hundred cases of the former have been reported. In a recent summary by W. J. McNeal and R. M. Taylor, (*Journal of Medical Research*, Vol. XXX, No. 3, 1914) 24 cases of coccidioidal granuloma have been collected. As shown by these authors the name, coccidioidal granuloma, should be preserved for this third type of infection and the name Coccidioides immitis, proposed for the organism by Rixford and Gilchrist, (Johns Hopkins Hospital Reports, 1896, No. 1) should be preserved, in spite of the fact that the organism was first believed to be a protozoön. It is still necessary to emphasize that Coccidioidal granuloma is a distinct disease and is not to be confused with the cutaneous blastomycosis and the systemic infection sometimes produced by the organism of cutaneous blastomycosis. The summary of McNeal and Taylor is so complete and so recent that nothing can be added to their list. They confirm observations of mine which have an important bearing in the classification of the parasite, namely, that the spheres in tissue develop directly from the "septate mycelial thread," *i. e.* from segments of the mycelium and not from the chlamydospores. They also for the first time succeed in obtaining, in cultures under anaerobic conditions, reproduction by endogenous sporulation.

This case, a woman, was a patient of Dr. William P. Bolles of Boston, who has supplied the following history:

"Previous to 1903 she had travelled a good deal both on and off the beaten track—Europe, India, Japan, etc. In 1901 or 1902 she made her last long trip to California and Mexico. She has had a number of unrelated and minor troubles and for many years, eczema with intense itching, scattered and frequent boils, chronic nasal catarrh (ethmoiditis) and mild but persistent rheumatism, etc. She was operated upon for strangulated hernia in 1899.

"Although she had suffered off and on from boils for some years before, she only spoke of them casually, and my attention was not called to them until 1902 when she applied to me for treatment. There was nothing peculiar about the course of the furuncles except that some did not discharge, and others, when opened, yielded a thin necrotic material and healed slowly.

"In 1903 two slowly progressive swellings appeared on her head, one on the right side of her forehead at about the line of the hair, the other about an inch above the outer end of the left eyebrow. They were about an inch in diameter, smooth, rather flat and nearly round; at first hard-like periosteal thickening, afterwards they softened in the middle. The one on the right side especially presented a circular edge of bone around the central softening. She declined for several months to have any surgical treatment either for these or for some "boils" under her arm. The cranial nodes were not very tender or painful.

"During the summer of 1903 she was not in my care but had a prolonged x-ray treatment which did not appear to have any effect on the course of the disease. During this time the swelling on the left side of the head burst subcutaneously and its contents filtered downward into the eyelid causing much edema and closing the eye. There were two smaller foci on the scalp, one behind the ear about one-quarter of an inch in diameter.

"In January, 1904, I operated, opening and curetting out all the nodules. They consisted of necrotic tissue with brownish or grayish pus, some granular bodies like miliary tubercles and inflammatory thickening. The mass over the left eye was mostly fluid. Under the two principal swellings, those on the forehead, the bone was entirely disintegrated and the holes about an inch in diameter like trephine openings with smooth perpendicular walls reached to the dura, when the soft mass had been removed with a curette. The dura was not involved. At the same time the nodule under the left arm was curetted and thoroughly cleaned out.

"Recognizing the unusual character of my patient's trouble Dr. Wolbach, at my request, was present at the operation and obtained cultures directly from the lesions and subsequently from rabbits inocculated by Dr. F. B. Mallory to whom tissues were sent for diagnosis.

"Recovery was slow but complete.

"In March she had lobar pneumonia from which she recovered slowly. Specimens of the sputum and urine were sent to Dr. Mallory who was unable to find any organism of coccidioidal granuloma in them. Clinically the case was one of pneumococcus pneumonia. The history of the patient subsequent to operation is as follows: In December, 1911, she had an acute obstructive jaundice. I operated and removed a small calculus from the common duct. The recovery was rapid and uneventful.

"At present she is in a fair condition excepting chronic 'rheumatism'. There has been no return of lesions similiar to those which proved to be coccidioidal although there have been a few furuncles which healed spontaneously. In the last few years the eczema has diminished and the furuncles have become less troublesome. She is now about seventy-five years old, is active for her age and attends to her numerous intellectual and charitable interests."

SUMMARY.

This case is one of two cases in the series of 24 recently collected by McNeal and Taylor which have recovered. The other case which recovered was localized in the leg and recovery followed amputation. It is the only case which has occurred in a woman. It is of course impossible to prove that the patient does not still harbor the parasite possibly in encapsulated lesions such as occur in tuberculosis. The patient unquestionably showed considerable resistance to the infection as the slow progress of the original lesion indicated. For all practical purposes she is cured, and has remained free from the disease for a period of ten years although subject to ordinary furunculosis.

Clinical Department.

THE ALCOHOLIC INJECTION OF THE INTERNAL BRANCH OF THE SUPERIOR LARYNGEAL NERVE.

BY IRVING SOBOTKY, M.D., BOSTON.

Laryngologist, Long Island Hospital and Berkeley Infirmary; Assistant Laryngologist, Mt. Sinai Hospital.

A MORE distressing picture than that presented by an advanced painful tuberculous laryngitis is hard to find. The patients have such exquisite pain in attempting to swallow that they often refuse food. As tuberculous laryngitis is almost invariably secondary to phthisis, a disease where forced feeding is essential, it is easy to recognize that the lessened nutrition materially hastens the outcome.

Pain on swallowing may appear early and is present when any part of the upper aperture of the larynx is involved in the tuberculous process. Involvement of the epiglottis renders the prognosis more dubious and the symptomatic treatment less satisfactory. In such cases the swallowing of solid food causes pain, while in tuberculous affection of the arytenoid region, the swallowing of fluids gives pain.

Ulceration of the posterior wall of the epiglottis or of the arytenoid cartilages produces the most severe pain but infiltration of the muscles or perichondritis can also produce pain.

Various anodynes may be applied to the larynx to render feeding more comfortable. Cocain of 5% strength, novocain, or beta-eucaine may be applied or sprayed on the larynx shortly before meals but orthoform is more advantageous and the effect lasts longer. However, all these anodynes give only fleeting relief and the pain returns in twenty minutes to two hours after application. The blocking of the internal laryngeal nerve by injecting it with alcohol, gives the greatest and most permanent relief to these unfortunate sufferers.

The superior laryngeal nerve is the sensory nerve of the larynx. It is a branch of the pneumogastric and arises from the middle of the inferior ganglion of this nerve. It descends behind the internal carotid artery, between the middle and the inferior constrictor muscles, and divides into the internal and external laryngeal nerves. The internal nerve penetrates the thyro-hyoid membrane and supplies the mucous membrane of the larynx. The branches of this nerve form plexuses beneath the epithelial layer of the mucous membrane, end in bodies similar to the taste buds of the mouth, and are surrounded by ganglion cells. These are fewest in the vocal cords. The internal laryngeal nerve is accessible for injection at the point where it pierces the thyro-hyoid membrane.

Technic. Place the patient in a recumbent position. Using the usual aseptic precautions, locate by pressure the tender spot where the nerve pierces the thyro-hyoid membrane, usually at the upper edge of the thyroid cartilage and one-third the distance from the outer edge. Introduce a somewhat blunted needle about one and a half cm. into this point at right angles to the skin. Should the patient cough, the needle is in the lumen of the larynx and must be withdrawn. He must be forbidden to talk or to shout and told to signify ear pain by raising his hand. If the introduction of the needle has produced no discomfort, turn it upward and outward toward the ear, and if this does not produce intense pain move the needle cautiously in various directions until the pain, referred to the ear, is produced. The instant the patient shows he is in pain, push the piston of the syringe slowly and allow only one or two drops of the 85% solution of alcohol to escape. If this augments the pain inject one to one and a half c.c.

In successful injections there is little inflammatory reaction about the site. The pain on swallowing disappears and does not return for anywhere from ten days to three months. If both right and left internal laryngeal nerves are to be injected, as is usually necessary, it is best to wait two or three days between injections.

Some laryngologists use a ½% solution of cocaine with the alcohol, as this mixture diminishes the pain of the injections. However, patients have had so much pain they cheerfully stand the temporary discomfort of injection.

Untoward Results. If the needle is too far back, the superior thyroid or the external carotid artery may be pierced. If too low, the thyroid cartilage; if to high, the hypoglossal nerve. If the alcohol gets into the larynx it produces a local inflammation that adds to the patient's discomfort for a short time. Should the alcoholic injection fail to relieve the pain, it can be repeated in two or three days. It is perhaps needless to say that if the ulcerations are located at parts not supplied by the nerve a good result cannot be hoped for by this treatment. Methofer reports 17 tuberculous laryngitis cases, with painful deglutition, treated by alcoholic nerve injections. All except one were free from pain within 24 hours. The duration of relief varied from five days to three months. Roth of

Bad Reichenhall, R. Hoffman of Munich and H. Horn of San Francisco report good results.

The author has not had as much success as his colleagues quoted above, but can report encouraging results only. The cases given below were picked at random, as this would seem fairer than to report only the cases where the results have been entirely favorable.

CASE 1. Mr. A., seen at the clinic of Prof. Bruhl, Berlin, June, 1911. Aet. 40, diagnosis, advanced pulmonary tuberculosis, tuberculous laryngitis. Was aphonic, complained of exquisite pain when attempting to swallow and had dyspnea. The larynx showed ulceration of the arytenoid region and of both vocal cords. The right internal laryngeal nerve was injected with alcohol; four days later the left nerve was injected. Seen one week after the first injection. Patient said he was much relieved and could swallow food without discomfort. Two weeks later the laryngeal condition was unchanged. Not seen again.

CASE 2. Mr. C. Seen at Long Island Hospital, Boston, May, 1914. Aet. 24, diagnosis, advanced pulmonary tuberculosis, tuberculous laryngitis. Examination of the larynx revealed ulceration of the interarytenoid region, edema of both arytenoid cartilages and erosions of the vocal cords. The left internal laryngeal nerve was injected with alcohol. Seen again on June 4. He said he had been very comfortable since the injection and had only slight pain on swallowing. He asked to have the right nerve injected. This was done. The next two days he felt very uncomfortable and complained of pain and burning on the injected side. Two weeks later he said the last treatment had been of no benefit and refused further injections.

CASE 3. Mr. G. Seen at the Mt. Sinai Hospital, Boston, Aug. 1, 1914. Aet. 32, diagnosis, advanced pulmonary tuberculosis, tuberculous laryngitis. He gave a history of a throat operation at the North Reading Sanatorium seven weeks before. Examination of the larynx showed the entire mucous membrane pale, with here and there, patches of mucus adherent. The middle portion of the epiglottis was missing, leaving a V-shaped depression. The surface was comparatively clean. Both arytenoids were swollen and infiltrated. The vocal cords were ragged but there was no actual ulceration. He complained of pain on swallowing. The right internal laryngeal nerve was injected with an 85% solution of alcohol. On Aug. 22 he said he had been free from pain for four days following the injection. One c.c. of alcohol was again injected into the right nerve. On Sept. 5 he said he was free from pain for a week following the second injection. At this time his general condition was very poor and the end was apparently near. However in view of the relief afforded him by the previous injections an attempt was made to inject the left nerve. This was not completed because of the weakness of patient. Death occurred two weeks later.

The writer wishes to express his thanks to Dr. Richards of the Long Island Hospital and Dr. Arkin of the Mt. Sinai Hospital for placing the cases at his disposal and for permission to report them.

Medical Progress.

SEVENTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY.*

BY ROBERT B. OSGOOD, M.D., ROBERT SOUTTER, M.D.,
HERMANN BUCHOLZ, M.D., HARRY C. LOW, M.D.,
MURRAY S. DANFORTH, M.D.,
BOSTON.

(Concluded from page 59.)

CONGENITAL DEFORMITIES.

Congenital Dislocation of the Hip.—Lance[35] states that the consensus of opinion in the last decade has favored attempting reduction not earlier than the second year and preferably before the seventh year and not after the ninth. Lance's own opinion, based on cases reduced by himself and others earlier than the second year, is not in conformity with this. He believes that as soon as the diagnosis is made reduction should be attempted.

[Ed. Note.—We have believed that forcible reduction and retention in plaster were best not attempted before the second year for the following reasons: 1. There is less danger of injuring or displacing the epiphysis. 2. Fixative dressings for long periods are not easy to apply or to retain before two years. 3. Manipulation is safer after two years on account of the firmer texture of the bone after some weight-bearing. In the experience of one of the editors in three cases under two years in which simple abduction and traction had been employed, spontaneous reduction had occurred.]

Gangolphe and Plisson[36] give detailed histories and radiographic findings in eight cases of what they call latent congenital subluxation of the hip. The symptoms not appearing until the age of 25 to 30 are those of some form of arthritis or coxalgia, and they believe that the Roentgen rays show this latent tendency to dislocation, causing great susceptibility to strain and the development of an irritative arthritis because of the instability. In their hands the avoidance of fatigue and the strengthening of the muscles about the hip joint by special exercises has been sufficient to cause a disappearance of the symptoms.

Congenital Forward Dislocation of the Knee.—Rechmann[37] has reviewed fifty-nine reported cases of congenital forward dislocation of the knee and adds two more from the clinic of Prof. Riedinger in Würzburg. There are three stages, 1. Genu recurvatum. 2. Subluxation with lack of power to flex the knee. 3. Forward dislocation of the tibia on the femur. The most striking feature of all the stages is the power of hyperextending the knee, the patients being able frequently to touch the abdominal wall with the toes. The treatment consists in reducing the deformity; in extreme cases lengthening the patellar tendon is necessary. Fixation is followed by ambulation in a brace maintaining the corrected position.

Ebert[38] calls attention to the necessity of differentiating between cases of congenital dislocation of the shoulder, epiphyseal separations, and the traumatic (obstetrical) dislocations. The characteristic attitude in which the arm lies in congenital dislocation is that of "birth palsy," *i.e.* adducted across the chest and strongly rotated inward. Upon abduction and outward rotation the slip of reduction is felt, the dislocation recurring as the arm falls. In cases seen early, reposition and fixation in the position of abduction and external rotation is sufficient. Later cases may require quilting of the capsule or osteotomy of the acromion and of the humerus, with outward rotation of the lower fragment.

Free Fascial Transplantation.—Kirschner[39] who was the first systematically to use free fascia flaps has written an important and exhaustive paper in which he discusses the results of the use of free fascia in his own and other surgeons' hands. He is still much impressed with the usefulness of the method. Some of its advantages may be summarized: 1. Its availability. Kirschner believes in autoplastic grafts.

2. Its tendency to heal without reactions even under unfavorable anatomical conditions. 3. Its prolonged and perhaps permanent life in its transplanted position. At length Kirschner discusses the details of its use, the most important being. 1. Repairing tendons. 2. Substitution for articular ligaments and as artificial ligaments to maintain corrected positions of the foot, etc., in poliomyelitis. 3. As restraining bands to prevent dislocations of joints, the patella, or slipping tendons. 4. As interposing flaps in attempts to mobilize stiffened joints. 5. To cover amputation stumps. 6. To reinforce plastics for herniae of abdominal or thoracic walls and to strengthen or replace the dura mater.

[Ed. Note.—There seems to be little doubt that transplantation of free fascia, certainly autoplastic and possibly homoplastic, will continue to be increasingly employed with success. In our own hands it has proved a most satisfactory material, perfectly tolerated by the tissues into which it has been implanted.]

Giertz[40], Hofmann[41], and Lewis and Davis[42] all report successful results with extensive fascial implants in the substitution of tendons and of the plantar fascia of the foot.

JOINT SURGERY.

Arthroplasty.—In earlier reports we have devoted considerable space to the subject of arthroplasty and the reports of successful cases. We believe the subject to be of great importance. It is more possible at present to review end results and to obtain a somewhat more judicial consensus of opinion.

Brocq[43] in a long article has reviewed the results of various methods of treatment carried out in different clinics for vicious ankylosis of the knee. He considers that when the angle of flexion is less than 90° resection is usually advisable. He thinks there is no case on record which is above criticism which proves that a permanently useful new joint can be obtained by the method of total graft. He is still sceptical but hopeful concerning the formation of useful joints in the knee by the reshaping of bone ends and the interposition of flaps of tissue or other substances.

Helferich's[44] review of the subject of arthroplasty, or as he called it before the last International Congress, "Operative neoarthrosis," is also of great value. The description of the technique offers nothing especially new, and the indications for the operation are those laid down by most careful surgeons who have had experience with these procedures. Helferich lays special stress on the wisdom of waiting for a long time after an infectious process has been active before attempting arthroplasty. "One cannot wait too long." He has collected about 300 published cases in many of which the process leading to the ankylosis had not been sufficiently healed to warrant the operation. Of these three hundred, 120 were of the elbow, 75 of the knee, 49 of the hip, 20 of the jaw, and small numbers of most of the other joints. Many of the elbows are satisfactory. The knee operation he considers still in the experimental stage in spite of some individual very encouraging results. Some of the hip cases he considers have been greatly improved and he believes that the shoulder and the isolated ankylosis of the patella offer favorable opportunities. The impression which is left from the review is that a new field has been opened, but that especially in the knee joint, where the greatest need for successful arthroplastic operations exists, there has resulted so far, when the cases are carefully sifted, the least general measure of success.

We have not before reviewed a very careful and helpful piece of research work done by Allison and Brooks[45]. Their quite long series of experiments on dogs was undertaken to determine the tissue changes taking place in joints as a result of the interposition of substances intended to favor mobility. The results which they observed from the use of different substances are most interesting. I. Cargyle's membrane. This persisted only ten days and was of no use in preventing fibrous union. II. Free fascia. Persisted for a long time, but not in a continuous layer. Where parts were destroyed islands of fascia were left, about which the new adhesions between the joint surfaces formed. In two cases in which the fascia entirely disappeared there were no adhesions between the denuded surfaces. III. Pedunculated fascial flaps acted in the same way as free fascia, but the pedicle formed an extra restricting band. IV. Chromicized pigs' bladder (Baer) persisted longer but caused a marked local reaction and may have been the cause of the considerable adhesions of fibrous tissue that formed and in every instance of its use caused a more or less firmly united joint. V. Fascia impregnated with metallic silver was not in the least irritating, persisted well, and in each case the denuded bone surfaces were covered with a connective tissue layer. Very few adhesions were present and the new bone formation was very slight.

[Ed. Note.—The work of Allison and Brooks is purely experimental on animals and does not attempt to show any functional end results, but it is surely most suggestive and we shall look for later reports of end results of the trial of this method in human cases.]

Fasano[46] eight years ago replaced a patella destroyed by an old osteomyelitis by a flap of tendon cut from the quadriceps and turned down raw side out and sutured. He reports the end result is still excellent and that similar operations on dogs have given equally good and durable results.

BONE SURGERY.

Certain recent pieces of experimental work concerning the question of osteogenetic function of the periosteum may be grouped together.

Brown (W. S.) and Brown (C. P.)[47] in a series of 25 experiments on dogs were unable to produce bone from periosteal implants into subcutaneous tissue and muscle. They were unable also to make free bone transplanted into non osseous tissue form new bone. Where a periosteal flap was lifted and carried through muscle back to bone no osseous tissue was produced away from the bone. Transplanted bone in contact with living bone produced new bone. They conclude that periosteum does not produce new bone.

Gallie and Robertson[48] believe as the results of their careful and seemingly comprehensive experiments that Duhamel, who from his experiments in 1739 concluded that periosteum produced bone, was misled by the growth of the endosteum. They have repeated Duhamel and MacEwen's experiments and are convinced that MacEwen is right and Duhamel is wrong, and that periosteum does not produce osseous tissue.

The results of McWilliams[49], based on experiments and human transplants, also are in the main like those of other recent observers, though he thinks that periosteum may produce bone in soft tissue. He brings out clearly the value of periosteum as a limiting membrane and a source of blood supply.

Cohn and Mann[50], repeating most of MacEwen's experiments in 32 of their own in dogs, conclude that at least periosteum does not always produce bone. In none of their cases did they observe any ostetogenetic function. They think that small free bone implants may grow. They consider the periosteum to be a limiting membrane.

TRAUMATIC LESIONS, FRACTURES, DISLOCATIONS, ETC.

Hey Groves,[51] after a large experimental and clinical experience, has reached certain definite conclusions: 1. Not to operate upon any case unless it seems probable that a better result can be obtained than by conservative treatment. 2. If operation is decided upon to employ a method by which perfect anatomical restoration of form can be secured and maintained by mechanical means of such efficiency that at the close of the operation the bone is stronger than before the fracture. He believes that we should not depend upon the frictional grip of nails or screws, but advocates a modification of the bolts and nuts of Prof. De Page (Brussels). 3. If perfect fixation has been thus accomplished he believes the limb should be freely moved as soon as the skin wound has healed,—7-14 days, and that natural function should be resumed as soon as true union has occurred. These conclusions are very similar to those of Sheen,[52] who as the result of a previous large practical experience without the use of plates and a recent trial of the operative methods of mechanical fixation believes that "no plating is satisfactory unless the bone junction is perfectly firm so that the weight of the limb can be borne by it." Hey Groves considers that Bardenheuer, by his traction methods, Lucas Championnière by the emphasis he has placed upon the evil effects of prolonged fixation, and Lane by the development of efficient local fixation, are responsible for the recent advances in the treatment of fractures. When non-union has occurred he believes that bone grafts are of great value. They should be accurately fitted and retained in position by pegs or sutures. Their failure to stimulate union has been due, in his opinion, to their being loosely inserted.

Albee,[53] in reporting fifteen cases of pseudarthrosis in which he has obtained good union in every case, credits his success to the use of his twin motor saws, which accurately cut and mortise the graft, position being maintained by bone pegs or sutures of kangaroo tendon through drill holes. He thinks it is of importance to take the autogenous graft from some healthy bone and not from the eburnated shaft near the seat of fracture.

Bland Sutton[54] believes that fractures of the external malleolus are frequently unrecognized. When recognized he has found them hard to hold in place and that the displacement was a cause of much pain. He has had good results from the removal of the small loose fragments.

Cotton's[55] article on astragalus injuries is comprehensive and analytical, and his advice as to treatment is helpful. These fractures, especially when the calcaneo-astragaloid joint is involved, are often very crippling and interfere seriously with the flexibility and painless function of the foot.

Turner Thomas[56] maintains that the primary cause of "obstetrical palsy" is usually not the rupture of the brachial plexus, but rather the posterior subluxation of the shoulder joint. In the injury to the joint the plexus may be involved in the adjacent inflammation and at operation found to be imbedded in an abundance of tough adhesion, but he is convinced that the frequent presence of a posterior subluxation and the bent down condition of the acromion process are due to more than a brachial plexus injury. In the nine cases of severe and permanent palsy there was associated a subluxation. In two of the three cases in which there was no subluxation full function has returned. Immediately after birth reduction will be easy, the recognition of the condition being the important thing. He believes that cases in which there is no dislocation or the head of the humerus can be brought into place, offer a good prognosis, and that by exercise the capsule may be stretched to allow full abduction and the muscles induced to functionate. He agrees with Prof. Lange that these cases should not be "left alone."

Mencke[57] calls attention to the often serious and permanent disabilities resulting from fracture of the acromion process. He is sure the lesion is frequently overlooked. The injury is commonly due to falling on the hand with the arm abducted and the impact of the head of the humerus, as the arm is still further forcibly abducted. Direct blows he thinks are rarely responsible.

Thomas[58] also reports 18 cases of habitual or recurrent dislocation of the shoulder joint in which he has performed the operation of capsulorraphy with good results in all. He prefers the anterior axillary incision and carefully describes the steps and the dangers. He looks upon the lesion as merely a hernia of the joint and believes the operation more safe and effective than that for inguinal hernia. The convalescence is from one to three weeks.

Schwarz[59] considers that sudden traumatic separation of the upper epiphysis of the femur with immediate noticeable displacement practically never occurs. On the other hand, he believes that slight traumata may lead to a loosening of the epiphysis, which later becomes separated under the weight of the body.

[Ed. Note.—If Schwarz's views are true it is possible that we have here the explanation of certain of the obscure cases of flattened heads associated with coxa vara, which Bloodgood and Legg and others have reported.]

Lehmann[60] reports thirty-seven cases of injury to the elbow, comprising twenty dislocations, eleven fractures, and six questionable fractures, all in soldiers. There was more or less superabundant ossification about the joint following all these injuries. Many of these bony proliferations show a tendency to absorption if rest is afforded, but their occurrence indicates the necessity in these elbow injuries, even where the dislocation is reduced or no frank fracture is made out, of rest to the arm and the avoidance of too vigorous early massage.

MISCELLANEOUS.

Chronic Granulating Inflammation of the Bone Marrow. Rost,[61] working in Wilms' clinic in Heidelberg, has been conducting an interesting piece of research work on bone marrow. His work was stimulated by finding what seemed t be a chronic, granulating, non-suppurative osteomyelitis in several sections of bone remove from cases resembling tuberculosis. He the made a large series of experiments on rabbits t determine what influence a number of various substances had on bone marrow. Peptone, bouillon, tuberculin, sugar, olive oil, formalin, alcohol, acetone, magnesia, bismuth, agar, and indifferent fluids gave only a slight reaction, with a small scar containing little connective tissue, which is replaced by bone marrow in a few weeks. Perlmutter dust caused necrosis. Calcium led to the formation of giant cells. Horn dust was followed by rather extensive proliferation of connective tissue and the formation of cysts. Iodoform and Mesbé also caused some connective tissue formation, but the most extensive was caused by the injections of certain carbohydrates, such as Crude Paraffin and American Vaselin. The injection of cocci of decreased virulence caused a granulation tumor which greatly enlarged the bone, together with thickening of the vessels and a perivascular infiltration of round cells. Rost believes that many cases of chronic inflammation in bones of adults much resembling tuberculosis are really cases of chronic non-suppurative osteomyelitis, usually due to the staphylococcus.

[Ed. Note.—The editors have seen several cases of chronic non-suppurative osteomyelitis in which pain and the suggestion of a cavity in the x-ray plate have led to operative exploration. The findings in these cases have been confirmatory of Rost's views. In some of the cases a culture of the staphylococcus albus was obtained. In others there was no bacterial growth. There has been no frank suppuration, but evidence of a chronic low grade inflammatory process.]

Bone Necrosis. Axhausen[62] points out that the impression which most text-books of pathology give, that bone necrosis and sequestra formation are one and the same thing, is erroneous. Sequestra he believes are the result of infection and occur when a portion of necrotic bone is surrounded by pus and thus separated. Axhausen seems to take it for granted that cortical bone transplants become necrotic, but that the periosteum and portions of the marrow survive, and that the connection between dead bone and living periosteum is the cause of new bone formation.

Syphilitic Affections of the Bones in Children.—Fitzwilliams[63] considers that the only difference between syphilis acquired during adult life and syphilis acquired before or at birth is that in children the slight resistance of tissue allows the disease to run unchecked, irregular in its course, and with a riotous mixture of primary and tertiary symptoms. In his experience, children tolerate mercury well and its administration should be kept up at least two years. For the periosteal pain in tibial periostitis he advocates incision, division of the periosteum, the cutting of a long trench into the marrow and removing the strip of cortex, closing the periosteum and subcutaneous tissues with catgut. This seems to the editors a rather radical and usually unnecessary procedure.

Late Hereditary Syphilis of the Long Bones. Mouchet and Saint-Marc[64] publish two cases of late hereditary syphilis resembling in the x-ray appearances in the female patient a sarcoma and in the man a multilocular cyst.

[Ed. Note.—Such reports as this we believe are important, since our knowledge of syphilitic bone disease is still very meagre, and as Boorstein has said, far too few cases of syphilis of the bones have been carefully studied and reported, and we are very lacking in our ability to recognize the clinical manifestations. We are coming to realize that its types are very numerous and frequently very confusing, in that they resemble many other non-luetic bone lesions in their Roentgenological appearances.]

Operative Treatment of "Flat Foot." Els,[65] working in Garré's clinic in Bonn, has been impressed with the good results which have followed tenotomy of the Tendo Achillis in cases of "flat foot." They have followed Hertle's method of open incision, division of the tendon, turning of the divided ends away from each other, the one up, the other down, so that a space of about 4 cm. is left between. Els says that this space is bridged in a few months by a firm scar, tendon-like band. Most of these patients were able to resume their work in about five weeks after their operation, although many of them had been idle for many months previously. The marked diminution of pain even when the deformity was not much corrected he believes to be due to the lessened strain on the astragalo-scaphoid joint, owing to the change of position of the os calcis. Only occasionally are supports necessary, though in the severe cases a bone operation is advised.

[Ed. Note.—We are not confident that this operative procedure is wholly rational or advisable, although apparently it has relieved symptoms in many cases. In Els' cases there was, in addition to the tenotomy a rest of several weeks, which alone frequently relieves symptoms. He states also that the space between the divided ends of the tendon is soon filled in with a firm tendon-like band of scar tissue, which must act very like the tendon. In cases with marked deformity a support was used, and in those with abduction an alteration in the tread of the shoe. While we recognize the frequent association of a short heel cord with foot strain and acknowledge its etiologic relation in certain cases, we see many cases, ranging from simple pronation strain to marked valgus, in which dorsal flexion to well beyond a right angle is possible. We are inclined to believe that this operation has little to commend it over a simple tenotomy or tendon lengthening and that even these procedures are only rarely necessary in cases of foot strain.]

Under the title of Etiologic Relation of Posture and Gait to "Flat Feet," Harris[66] holds that improper posture and faulty methods of standing and walking are responsible for weak and flat feet and believes that arch supports should never be worn, and maintains that all cases can be cured by certain exercises which he describes: 1. Rising on heels. 2. Rising on tiptoes. 3. Rising on flexed toes, "grasping." 4. Feet crossed, swaying laterally, etc., etc.

[Ed. Note. We agree heartily with this common relation of bad posture and gait to foot strain. We admit the abuse of arch supports by orthopaedic surgeons as well as by instrument makers and shoe stores, but we consider that the temporary use of some form of support is at times a most helpful means of relieving symptoms and allowing people to lead ambulatory lives. We believe that they should not be prescribed as is so often done as a cure. We should not relax one whit in our exercise treatment and the gradual development of muscles so that a normal shaped flat heel, flexible shanked shoe may be worn with comfort and may aid in the further development of muscles, while the strength and flexibility of the foot is increased. The emphasis at present needs to be laid upon the surprising gains which can be made in this manner by persistent work on the part of the patient even in cases of rigid, painful feet. We do not believe, however, that growing children with bad weightbearing lines, not controllable by altering the tread of flexible shoes, or adults with faulty muscle balances and valgus, should be allowed to walk in positions of deformity and strain. Any exercise treatment administered to muscles already fatigued is less efficient than it should be. Let us be rational and relieve strain in the foot joints by temporary support as we do in other joints. Let us give the devil his due, though at the same time recognizing that what may be a temporary blessing may be a permanent curse.]

Hunt[67] describes a painful spasm of the lumbar muscles following the exertion of walking or standing, which disappears after a brief period of rest. The motions of the spine may be free and painless and the symptoms are produced only by rhythmic muscular exercise. Hunt considers these symptoms to be due to the same causes as the more generally recognized angina cruris or intermittent claudication and limping, where the cramplike spasm is present in the calf. The arteriosclerotic changes often present in the abdominal aorta in these cases of "Ischaemic Lumbago" seem to account for the condition.

We believe that the example of the American Orthopaedic Association in appointing at its

Washington, 1913, meeting a Commission to Study the Results of Treatment of Scoliosis may well be followed by the appointment of other impartial commissions to study the results of other vexed questions such as arthroplasty, etc. This Scoliosis Commission invited various physicians who were having large clinical opportunities to submit to it six cases, which had been treated by the various methods of forcible correction in plaster jackets. They then selected the clinic of Dr. E. G. Abbott, of the Children's Hospital in Portland, Maine, the clinic of Drs. Lovett and Sever at the Children's Hospital in Boston, the Clinic of Dr. S. Kleinberg at the Hospital for the Ruptured and Crippled in New York, and the clinic of Dr. Z. B. Adams at the Massachusetts General Hospital in Boston, for personal observation. Cards with identical headings as to cause, types of curvature, length and type of treatment and previous condition as shown by records and present condition, were made out by the surgeons for their own cases and independently by each member of the Commission who personally visited the different clinics at the same time and observed the patients and their records. The cases were divided into Grades A, B, and C in proportion to their severity and rigidity and the figures 1, 2, 3, 4, denoting grades of improvement from overcorrection to no improvement were agreed upon. Percentages could then be roughly worked out and the Commission found these were practically the same in all their three independently taken observations, though they did not in most cases agree with those of the physician whose cases were being thus critically studied. The report of this Commission was presented at the June, 1914 meeting of the American Orthopaedic Association held in Philadelphia, and has been published in the July number of the American Journal of Orthopaedic Surgery. The great difficulty which the Commission found in arriving at absolutely trustworthy judicial conclusions was the meagerness and lack of standardization of the previous records of the cases. The Commission has been continued and this year is taking its records with X-ray and standardized photographs in the same clinics of a series of cases before treatment, and is planning to take other similar records of the same cases after six months of treatment. We believe this method represents real progress in orthopaedic surgery and is likely to allow an earlier reliable conclusion as to the value of new methods of work than has been possible heretofore.

BIBLIOGRAPHY.

[1] Nohl: Beit. zur Klinik der Tuberkulose, xxix, No. 2, 1914.
[2] Raw: Lancet, Jan. 3, 1914.
[3] Menard: Orth. et Tuberculose Chirurgicale, Jan., 1914, p. 3.
[4] Packard: Am. Jour. Orth. Surg., Jan., 1914, p. 400.
[5] Biteroff: Münch. med. Woch., Feb. 17, 1914, No. 7.
[6] Scaduto: Policlinico, Jan. 11, 1914.
[7] Leuba: Deutsche Ztschr. f. Chir., cxxv, p. 413.
[8] Rogers: Boston Med. and Surg. Jour., June 8, 1911, p. 811.
[9] Mau: Beitr. zu klin. Chir., lxxxviii, p. 320.
[10] Küchenhoff: Beit. z. Klinik d. Tuberkulose, xxix, No. 2, 1914.
[11] Sforza and Cosco: Policlinico, Dec. 7, 1913, xx.
[12] Rosenow: Jour. of Infectious Dis., Jan., 1914.
[13] Barker: Am. Jour. of Med. Sciences, Jan., 1914.
[14] Wollenberg: Ztschr. f. orth. Chir., 1914, xxxiv, Heft 1-2.
[15] Delrez: Arch. gén. de Chir., viii, No. 1, p. 39.
[16] Pemberton: Am. Jour. Med. Sciences, Dec., 1913, Jan., Feb., March, 1914.
[17] Treves: Brit. Med. Jour., 1885, i, 415; 1886, ii, 583, 638; Lancet, 1888, October.
[18] Dreike: Deutsche Ztschr. f. Chir., 1895, xl, 43.
[19] Bean: Bull. Johns Hopkins Hosp., 1912, Dec., 363.
[20] Bryant: Boston Med. and Surg. Jour., 1914, May 21, 795.
[21] Bryant: Internat. Abstr. of Surg., May, 1914, 449.
[22] Menzer: Berl. klin. Woch., Dec. 1, 1913.
[23] Ibrahim: Ztschr. f. orth. Chir., 1914, xxxiv, Heft. 1-2.
[24] Tommasi: Riforma Medica, Dec. 6, 1913.
[25] Solis-Cohen: Am. Jour. Med. Sciences, Feb., 1914.
[26] Stoffel: Ztschr. f. orth. Chir., xxxiv, Heft 1-2, p. 124.
[27] Hohmann: Münch. med. Woch., 1913, No. 25.
[28] Bülow-Hansen: Zentralbl. f. chir. u. med. Orth., Feb., 1914, p. 83.
[29] Bundschuh: Beitr. z. klin. Chir., lxxxvi, p. 378.
[30] Kölliker: Zentralbl. f. chir. u. mech Orth., Feb., 1914, p. 81.
[31] Marfan: Arch. des méd. des enfants, Aug., 1913, xvi, N. 8.
[32] Kling and Petterson: Deutsche med. Woch., Feb. 12, 1914.
[33] Soutter: Boston Med. and Surg. Jour., March 12, 1914.
[34] Moulton: California State Journ. of Med., Feb., 1914.
[35] Lance: Gaz. des Hop., lxxxvi, No. 23, p. 359.
[36] Gangolphe and Plisson: Lyon Chir., Feb., 1914, xi, No. 2.
[37] Rechmann: Arch. f. Orth., Mech., u. Unfallchir., xiii, H. 3.
[38] Ebert: Arch. f. Orth., Mech., u. Unfallchir., Bd. xiii, H. 3.
[39] Kirschner: Beitr. z. klin. Chir., lxxxvi, p. 5.
[40] Giertz: Deutsche Ztschr. f. Chir., cxxv, 1913, Nos. 5-6.
[41] Hofmann: Zetschr. f. Chir., Dec. 27, 1913.
[42] Lewis and Davis: Jour. A. M. A., Feb. 21, 1914, p. 602.
[43] Brocq: Rev. de Chir., 1913, Nos. 9, 10, 11, 1914.
[44] Helferich: Münch. med. Woch., Dec. 16, 1913, p. 2769.
[45] Allison and Brooks: Surg., Gyn. and Obstet., Dec., 1913.
[46] Fasano: Policlinico, Dec. 21, 1913.
[47] Brown and Brown: Surg., Gyn. and Obstet., Dec., 1913.
[48] Gallie and Robertson: Canadian Med. Jour., Jan., 1914.
[49] McWilliams: Surg., Gyn. and Obstet., Feb., 1914.
[50] Cohn and Mann: Southern Med. Jour., March, 1914.
[51] Hey Groves: Lancet, Feb. 14 and 21, 1914.
[52] Sheen: Brit. Med. Jour., Feb. 21, 1914.
[53] Albee: Am. Jour. Surg., Jan., 1914.
[54] Bland Sutton: Lancet, Feb. 7, 1914.
[55] Cotton: Am. Jour. Surg., Jan., 1914.
[56] Thomas: Annals of Surg., Feb., 1914.
[57] Mencke: Annals of Surg., Feb., 1914.
[58] Thomas: Surg., Gyn. and Obstet., Jan., 1914.
[59] Schwarz: Beitr. z. klin. Chir., lxxxvii, p. 709.
[60] Lehmann: Deutsche Ztschr. f. Chir., cxxvi, 1914.
[61] Rost: Deutsche Ztschr. f. Chir., cxxv, 1913, p. 83.
[62] Axhausen: Deutsche med. Woch., Jan. 15, 1914.
[63] Fitzwilliams: Clinical Jour., Jan. 21, 1914.
[64] Mouchet and Saint-Marc: Rev. d'Orthop., Jan., 1914, p. 37.
[65] Els: Beitr. z. klin. Chir., lxxxviii, No. 1.
[66] Harris: Military Surgeon, Jan., 1914.
[67] Hunt: Jour. A. M. A., Feb. 28, 1914, p. 671.

◆

Reports of Societies.

NEW ENGLAND PEDIATRIC SOCIETY.

C. A. Pratt, M.D., *Pres.*
Fritz B. Talbot, M.D., *Sec.*

The Thirty-second Annual Meeting of the New England Pediatric Society was held in the Boston Medical Library, Friday, Oct. 23, 1914, at 8.15 P.M.

The following papers were read:

MEGALOCOLON AND MICROCOLON WITH CASE REPORTS.

Dr. Langley Porter, San Francisco, Cal.

THE DIFFERENTIATION OF HUMAN AND COWS' MILK BY COLOR TESTS.*

Dr. Richard S. Eustis, Boston.

ASTHMA IN CHILDREN: ITS RELATION TO EGG POISONING.†

Dr. Fritz B. Talbot, Boston:

---

* See Journal, page 92.
† See Journal, Vol. clxxi, page 708.

MEGALOCOLON AND MICROCOLON.

By **Langley Porter**, M.D., and **Allanson Weeks**, M.D. (From the Medical Dept. of Leland Stanford Jr. University.) It is probable that megalocolon is a more common deformity than is generally thought. The writers have encountered six cases during the past five years.

The symptoms present from birth are great abdominal enlargement, visible peristalsis, obstinate constipation, later anemia and toxemia from fecal retention.

The process may include the entire gut or it may cease at the sigmoid and be replaced by a narrowing. That isolated segments of the large intestine may be affected while most of the gut remains intact and healthy is to be doubted. Fatal collapse can occur from fecal obstruction and this may be brought on by injudicious attempts to empty the bowel.

High fat formulae are not adapted as soap stools give more trouble in all classes of megalacolon than other stools. Enemata are the best means of producing bowel evacuations. Castor oil and magnesia are to be shunned. In older children milk should not be given.

The one measure that promises relief is operative procedure which should be utilized in two or three stages: colotomy with artificial anus; (and this cannot be done too early in the child's life or in the history of the case); lastly, excision of the entire large intestine with anastomosis from the ileocecal region into the rectum; or anastomosis may be done as a second step and resection of the entire colon be made a third operation.

The authors also reported a case of microcolon which illustrates a condition opposite to megalacolon and at the same time furnishes us with an abnormality in the small intestine which in every way parallels the pathological changes found in the large intestine in cases of giant colon. Some reports under the caption stenosis of the colon may have reference to this condition.

DISCUSSION.

Dr. J. L. Morse: I have a case here of this condition which I would like to show to the Society. A child of 25 months, born at full term; nursed for five months, then fed on condensed milk until a year old and since then on an average infant diet. The mother noticed that the abdomen was large at birth and states that in the beginning the enlargement was more noticeable in the lower part of the abdomen and gradually spread upward until it involved the whole abdomen. The baby has always had a good digestion. He has never vomited, but he has never had spontaneous movements. He had from one-half to one teaspoonful of castor oil every other day during the first year and castoria every other day since then. The baby has thriven normally, as you will see, and is in good general condition in spite of his trouble. He was under observation in the Children's Hospital from the third to the eleventh of October. He had no temperature during this time. The tuberculin test was negative. His white blood count was 10,800. He had no spontaneous stools, but with help had daily movements. These stools were medium sized, light-brown, semi-solid, and alkaline. They contained no neutral fat, but a very slight excess of soap and a little starch. That is, his digestion, as shown by the microscope, was fairly good. He had very definite undulating peristalsis throughout his abdomen. I do not know whether he will show it tonight or not, but he had it a good deal of the time while there. We had him under ether and nothing was discovered except the distinct loops or coils of intestine. He was given a bismuth meal, and we have the plates here which we will show you in a few minutes. These plates show that there is some delay in the emptying of the stomach, but that after the stomach is emptied, the bismuth goes down through the small intestine fairly normally. The plates taken after a bismuth enema show a dilatation of the intestine for some distance up. The bismuth apparently did not, however, come anywhere near going into the whole of the large intestine. I do not think that we gave him enough. The rectal examination was negative.

Dr. William Ladd saw the case with me in consultation and we both felt very strongly, as, of course, everybody does about this condition, that the child's best chance lay in an operation. The mother does not look at it the same way at present, but we hope that she will see the light later.

Dr. A. C. Eastman: It may be of interest to mention a case I saw a year ago illustrating the border line cases of megalocolon. This child I first saw in consultation one year ago at which time he was 14 months of age. The mother was still nursing him and having difficulty in weaning him. She gave a history of more or less vomiting during his first year in spite of being breast-fed. These attacks were irregular in onset and seemed to come more often in connection with attacks of constipation. After some difficulty he was weaned and for a while kept on a milk diet as there was difficulty in adding any other food. His constipation continued and at times was very stubborn. We added laxative foods to his diet as fast as he would take them, cutting down the quantity of milk, and for a while there seemed to be some improvement. In spite of this every few weeks he would have attacks of constipation which required most energetic treatment with oil, salts and enemata finally to secure a result.

Last May, when 22 months old I saw him again. He weighed twenty pounds, was still having marked constipation, general flabbiness of the muscles and altogether in a rather poor condition. His appetite was very poor and in order to get him to eat they had diminished his laxative diet and put him back on a milk diet. He was given two drops of nux vomica three times a day and put back on his laxative diet.

In August he had an attack of diarrhea followed within two or three weeks with his previous constipation. His movements were very light colored, of small size and quite frequent. He also cried with apparent pain each time that he had a movement.

In September x-ray plates were taken after a bismuth meal which showed normal muscular stomach tone, the bismuth appearing at the cecum within about four hours. A marked enlargement of the whole colon and rectum was shown and it took nearly 72 hours for the colon finally to empty itself of the bismuth. He was then put on a strict laxative diet and given high oil enemata each night. As a result he had a better movement early in the morning but continued to have frequent small dejections during the day.

In October his general condition was much improved and his present weight is 25 pounds.

Since the date of the meeting he continued to have considerable pain with his bowel movements which were still quite frequent and small. Rectal examination showed marked spasm of the sphincter with considerable excoriation around the anus. Applications of a mild ichthyol ointment were used for one week with slight benefit. The anus was then dilated under ether and since then his condition has improved steadily, the pain has ceased and the dejections larger and less frequent.

DISCUSSION ON DR. TALBOT'S PAPER.*

DR. H. I. BOWDITCH: How is this egg albumin administered? Is it given as a dry powder?

DR. R. H. SMITH: The egg albumin is prepared by Merck. It can be procured at the drug stores in the powdered form in capsules.

Book Reviews.

Kirkes' Handbook of Physiology. Eighth American Revision. Revised by DR. CHARLES W. GREENE. Illustrated. New York: William Wood and Company. 1914.

The appearance of a new edition of this widely used Handbook of Physiology arouses again the ever-recurring question as to the reason for its popularity as a text-book. It has been adopted by colleges as the basis of undergraduate instruction in physiology, and is used also in medical schools for the instruction of medical students. Whatever may be its merits as a handbook, to be used for reference by persons already familiar with the subject matter of physiology, as a text-book, to be placed in the hands of students, it serves neither undergraduates nor medical students satisfactorily.

To illustrate specifically: A review of histology, occupying 54 pages, is placed near the beginning of the book. The college undergraduate is bound to find this section dull and almost meaningless. The medical student, who, necessarily takes elaborate courses in histology, independently of his work in physiology, will pay no attention to it. Such histology as may properly be included in a text-book of physiology will be grasped more completely by the student if given in connection with the physiological discussions of the tissues described. A very brief general outline at the beginning serves better than an elaborate discussion.

Immediately following the section on histology is a chapter of 45 pages on the chemistry of the body. In this chapter the author plunges without warning into the most complex conceptions of organic chemistry. This procedure is legitimate in a handbook, but when the handbook is diverted to use as a text-book we are confronted with the fact that its users will be either students without adequate chemical preparation for comprehending these conceptions, or students whose previous or concurrent courses in biological chemistry make the introduction of them into a physiological text-book unnecessary. Much of the material of this chapter is useful for reference. The transfer of all of it, except a general outline, from the body of the work to an appendix, would increase the usefulness of the book as a text-book.

Passing on to the strictly physiological portion, we find in the chapter on blood, under theories of coagulation, Morawitz' complex theory given in detail, accompanied by his bewildering diagram, and immediately afterward Howell's beautiful simplification of the theory introduced, apparently as an afterthought, in such a manner as to becloud rather than to clarify the discussion.

There is no attempt to present the facts of physiology in sequence. The early chapters make familiar mention of matters which are not formally introduced until much later. Thus, on p. 84, enzymes and their catalytic action are mentioned, although no description of them is to be found until page 329 is reached. Similarly, in the discussion of means of hastening coagulation, on page 125, epinephrin is introduced, but the student does not become acquainted with this substance nor with the general conception of hormones until he has read more than three hundred pages further. In this same chapter on blood the phenomenon of coagulation, a matter purely of blood chemistry, is discussed in detail *before* the chemical nature of blood is described. Similar curious inversions of logical order occur throughout the book.

In many portions, notably the sections on the cerebrum, cerebellum, and sympathetic system, the author contents himself almost wholly with statements of the experimental basis for our knowledge of the functions under consideration, leaving the interpretation of the experiments to the reader. This method of presentation is highly satisfactory to the physician or physiologist who wishes to obtain at second-hand the data on which to base his own interpretations. For the beginning student the study of numerous experimental data, not all of equal significance, and unaccompanied by clean cut inferences, is less likely to lead to the desired grasp of physiology than is the reading of a text-book containing fewer descriptions of experiments, but emphasizing the fundamental principles which have been established as the result of the sum total of physiological investigation.

Save for a few errors in the index, the work, on the mechanical side, is satisfactory. The illustrations are well selected, as a rule, and are printed with enviable clearness.

---

* See JOURNAL, Vol. clxxi, p. 703.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, JANUARY 21, 1915.

EDITORS.
ROBERT M. GREEN, M.D., *Editor-in-Chief.*
WALTER L. BURRAGE, M.D. } *For the Massachusetts Medical Society.*
FREDERICK T. LORD, M.D. }

COMMITTEE OF CONSULTING EDITORS.
WALTER B. CANNON, M.D.
HARVEY CUSHING, M.D.
DAVID L. EDSALL, M.D.
REID HUNT, M.D.
ROGER I. LEE, M.D.
ALLAN J. MCLAUGHLIN, M.D.
ROBERT B. OSGOOD, M.D.
MILTON J. ROSENAU, M.D.
EDWARD C. STREETER, M.D.
E. W. TAYLOR, M.D.

ADVISORY COMMITTEE.
EDWARD C. STREETER, M.D., Boston, *Chairman.*
WALTER P. BOWERS, M.D., Clinton.
HOMER GAGE, M.D., Worcester.
JOEL E. GOLDTHWAIT, M.D., Boston.
LYMAN A. JONES, M.D., North Adams.
HUGH WILLIAMS, M.D., Boston.
ALFRED WORCESTER, M.D., Waltham.
ROBERT B. OSGOOD, M.D., Boston, *Secretary.*

ERNEST GREGORY, *Manager.* W. M. LEONARD, *Consulting Manager.*

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 *Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

HOSPITAL EFFICIENCY.

A HOSPITAL accused of being inefficient must of necessity meet a charge which involves a moral as well as a business responsibility. A group of men may lose money by poor business management and still lose it honestly, if the money was their own or is wasted with the approval of those who possessed it. Health may not thus honestly be lost by hospital inefficiency, since it never belongs to those by whom it is lost nor is it wasted with the approval of those who possessed it. Health should not be discussed in terms of dollars and cents.

We are convinced that this charge of inefficiency can with justice be made against certain hospitals. We believe that none desire to be inefficient and we know that the struggle to become efficient is the chief aim of many and the attainment of a few. There is no problem more important, but many of the methods of solution are still in the stage of development.

Without question there should be a group of representative men connected with every hospital who have the best interests of the hospital at heart, whose duty it is to evolve some standard by which the efficiency of the administration and the different medical services may be judged. The difficulty of picking this representative efficiency committee is admitted to be great. Mistakes will lead to a more careful selection but will not prove the principle wrong. The difficulty of evolving a standard of efficiency especially with reference to the staff, is admitted to be still greater, but with an earnest attempt to understand conditions of work, and by critical, and at the same time friendly, scrutiny of end results, we believe fairly suggestive impressions may be gained. These impressions may be confirmed or disproved by further special observation.

It may be fairly questioned whether at this time there are any hard and fast rules by which standards of efficiency applicable to all hospitals can be determined. Opinions of men differ. These men are equally well qualified to hold opinions and are zealous and earnest in striving to bring about this universally desired result. The report of the committee appointed by the Clinical Congress of Surgeons is important and suggests methods of determination. It should be read by everyone interested in hospitals, certainly by every member of every board of trustees and staff, and it should lead to an immediate consideration of the question by all hospitals.

We as medical men should not only welcome but demand the closest examination by friendly peers of our methods and, with due consideration, of our results. We believe we shall reach the goal of hospital efficiency most quickly by proceeding on the supposition that there is a sincere and general desire for this efficiency, though there may be honest differences of opinion as to methods of attainment. The large attendance at a recent medical meeting where the subject was under discussion was an evidence of the interest of physicians of this and other communities in this question.

Hospitals have a right to request that the investigation be left in their hands, but the public have a right also to demand that this investigation, which so closely concerns them, be thorough and as speedily carried out as the complexities of the problem will allow.

If this demand is not met it is conceivable that an unsympathetic investigation may be instituted, the inevitable injustice of which it is unpleasant to contemplate, and the harmfulness of which it would be difficult to measure.

EXERCISES IN THE TREATMENT OF TABES.

IN another column of this issue we publish a paper on compensatory exercises in the treatment of locomotor ataxia. Owing to the development of salvarsan therapy and the recognition of the fact that tabes must be taken out of its old category as a para-syphilitic disease and regarded rather as a late manifestation of the original infection, renewed interest in its treatment has been natural and inevitable. Experience is now sufficiently extensive to make the definite statement that tabes is distinctly influenced by arsenic therapy and it is, perhaps, not too much to say that, if taken in its early stages, it may be cured, or at least rendered stationary for an indefinite period of time. The enthusiasm which has attended this therapeutic outlook has, perhaps, distracted our attention from other useful, if less brilliant, methods of treatment. This is unfortunate, since it must be apparent that however beneficial salvarsan therapy may be, it can by no means be regarded as curative in well-developed stages of the disease. Its influence on pain and the various discomforts incident to the disease is now somewhat universally recognized, but that it can, unaided, overcome a pronounced ataxia of long duration, is not to be expected, and this, certainly, it has not succeeded in accomplishing in any notable degree. As an adjuvant, therefore, to the salvarsan treatment, which, in our opinion, should become a routine measure in practically all cases, stress should certainly continue to be laid upon the principle of training in coördination, originally advanced by Fraenkel and subsequently developed and amplified by Foerster, to which Dr. Swift again calls attention.

The Fraenkel exercises are clearly based upon a perfectly logical conception of the nature of ataxia as essentially a loss or impairment of coordination. It is apparent, therefore, that any means capable of redeveloping or reëducating the coördination becomes an entirely rational method of treatment. Experience demonstrates both its rationality and its practicability. It is quite possible to use these exercises, perhaps in somewhat modified form, in hospital out-patient departments and with unquestioned benefit to the patients, both as regards their general morale and also their actual capacity to coordinate their movements in more orderly fashion. It is possible, as suggested by Dr. Swift, that the Fraenkel movements lay unnecessary stress upon coördination in the lying position. Foerster, on the other hand, has placed chief emphasis upon the education of equilibrium and is of the opinion that, other things being equal, walking exercises and others in the erect position, lead more quickly to the desired end. In this connection it should be remembered that Fraenkel also insisted upon walking, but only after a somewhat perfect coördination in the less exacting reclining position had been secured. The suggestions made by Foerster and approved by Swift are, undoubtedly, of great practical importance in the treatment of this condition, and other things being equal, it is important to bear in mind that methods which lead to the most direct results are desirable. As a matter of fact, the theories of Fraenkel and Foerster are the same in principle and are supplementary to each other. The important point is, that both lay stress upon the necessity of training and coordination as a distinct method of treatment in one of the most distressing conditions of the disease. It is well to bear this in mind, as suggested before, in view of the possibly over-enthusiastic claims of salvarsan in the treatment of a disease which, if well developed, demands all the resources of our therapeutic art.

◆

THE PROPOSED ABOLITION OF THE OFFICE OF CORONER IN NEW YORK.

FOR a number of years past, efforts have been made by the more enlightened part of the community in New York to do away with the time-worn, if not time-honored, institution of "crowners' quest," but thus far they have proved unsuccessful. This year there seems to be some prospect that this desirable consummation may be attained.

One ground for this hope is the moral effect which must certainly result from the report by Leonard M. Wallstein, commissioner of accounts, of an elaborate investigation of the system as conducted in New York City, noted in last week's issue of the JOURNAL. According to this report, a continuance of the present system would constitute a public scandal and disgrace, and it is indeed a scathing record which is presented in the following extract:—

"An analysis of 800 inquisition papers made by Dr. Haven Emerson, deputy commissioner of health, shows that in 320 cases, or 40% of those examined, there is a complete lack of evidence to justify the certified cause of death. The incompetent work of the coroners' physicians in the investigation of criminal deaths deprives the community of an absolutely necessary deterrent to crime. So far as the activity of the coroners' office in New York City is concerned, infanticide and skilful poisoning can be carried on almost with impunity. Under the elective coroner system, and in the face of exceedingly difficult conditions surrounding successful criminal prosecution, New York is compelled to get along virtually without aid from the science of legal medicine, a situation that exists in no other great city in the world."

In the field of criminal abortion we learn that the system, instead of serving to detect crime, has become an agency for shielding defendants and concealing criminality. In connection with abortion cases coroners are said to have called or failed to call juries, as best suited their purposes, to have packed juries, and to have intentionally failed to call necessary witnesses or cause police investigation, or to utilize the results of such investigation when made. There is given a long catalogue of the shortcomings and misdoings of the coroners, and a few additional charges may be cited to show the necessity for a radical change. These officers have abused their powers to compel the employment of favored undertakers by the unfortunate families of deceased persons. Civil rights and liabilities have been profoundly affected by the findings of coroners whose action in many instances has been a travesty on justice. Attempts have not infrequently been made to extort sums of money from insurance companies in return for findings in the companies' interest, and until the enactment of the workmen's compensation law the coroner sometimes injured the rights of deceased workingmen by helping to establish for employing individuals or corporations a condition of affairs which would relieve them of liability.

The elective coroner in New York represents a combination of power, obscurity and irresponsibility which has resulted in inefficiency and in malfeasance in the administration of the office. With the coroner's constant temptation and easy opportunity for favoritism and even extortion, the report says, with utter lack of supervision and control, and without affording the slightest preparation or training to create in his mind a scientific and professional interest in the performance of his duties, the present system could not have been better devised intentionally to render improbable, if not impossible, the honest and efficient performance of the important public functions intrusted to this office. Candidates for the position of coroner are nominated "to balance the ticket," to represent a given race, religion, faction or district. Thus, almost every consideration except proper qualification determines the selection, and many of the coroners are absurdly ignorant both as to the legal and the medical aspects of their work. Still another serious objection to the system is the waste of the public funds, as the expense of its maintenance is something like $175,000 annually, an amount far exceeding what it would cost, under a proper system, to have the work done in an infinitely better manner. The present conditions have long been known, and it is asserted that a remedy would long since have been forthcoming had this not been prevented by purely selfish political considerations. Never before, however, has the public had set before it so complete an exposition of these evils.

Since the completion of the report a case has come to light which further illustrates the charges made in it. A laborer was found dead twelve hours after the janitor of the house where he lodged had helped him to his room in a disabled condition. The police apparently found nothing suspicious about the case and the body was taken to the morgue, where a coroner's physician gave the cause of death as nephritis. When, however, the undertaker who was employed came to examine the corpse he found a large wound at the back of the head. He promptly notified the district attorney's office, and consequently the funeral was postponed and the body ordered back to the morgue. There an autopsy was made by Dr. Charles Norris, director of the laboratories of Bellevue and Allied Hospitals, and Dr. Douglas Symmers, associate professor of pathology in the University and Bellevue Hospital Medical College; when there was found a wound in the back of the head about an inch long and half an inch wide, beneath which there was a linear fracture of the skull, while no evidence of any disease whatever was discovered in the kidneys. The appearances of the injury indicated that it was probably inflicted by a blow such as that by a hammer, and an examination of the man's room showed a considerable amount of blood on the floor, where his body was found.

The recommendations which Commissioner

Wallstein makes include the elimination of the "scandalous jury system and coroners' court" and the substitution therefor of a system of medical examinations by experts similar to that which has worked so successfully in Massachusetts, and he expresses the opinion that the choice between these two methods of fulfilling a public function is "as clear as the distinction between night and day." A bill embodying these recommendations is now being prepared for introduction in the legislature. Similar bills have from time to time been presented at Albany, only to be killed in committee or fail of enactment, but better things are hoped for this, especially as it is believed that it will have the earnest support, not only of the Mayor of New York, but of Governor Whitman, who, from his extended experience as district attorney, has had ample opportunity for observing the deficiencies of the coroner system as a deterrent from crime.

◆

THE IMPORTANCE OF THE PHYSICAL EXAMINATION OF THOSE ATTENDANT UPON INFANTS.

The untrained attendant received into the family to care for small children and infants, which work necessitates the closest and most intimate contact, often for long periods of time, is practically never examined physically before beginning such duties. In the hospitals, where courses of training of some months' duration are given, such persons are carefully looked over, but the number of persons receiving such training is very small. The problem as a whole does not affect a very large percentage of families, but is none the less an important one. It is estimated that 16% of American families keep one servant or helper and 2% more than one.

The importance of the subject narrows down largely to the consideration of the question of latent tuberculosis or inherited lues. When most persons are engaged in this work, they are at the age when latent tuberculosis is apt to become active, unnoticed perhaps for a considerable period of time, during which, the intimate contact between infant and attendant is kept up. We are, at the present time, more fully aware of the great amount of unrecognized and latent inherited lues in all large communities, through the application of the Wassermann reaction and the use of the x-ray.

It is not then saying too much, with due regard to the fallacy of some eugenic teachings and propaganda, that a person employed in such intimate contact with small children and infants, often for long periods of time, should, on demand, present a certificate of health from a reputable physician, competent to diagnose the above-named troubles. If the expense of such a certificate were too much for the attendant, arrangements could, perhaps, be made with employment agencies in large cities to have the applicants for such positions examined at some large hospital or dispensary, and such certificate issued at a nominal fee, to be renewed at any time, if all is found well. Whether or not the question is settled in this manner, it seems probable that the part of the public directly interested will, when their attention is called to the importance of the matter, have this examination made by their own physician.

◆

DISINFECTION OF SEWAGE FROM TRAINS AND STEAMERS.

We all recognize the danger of discharged excreta from trains while passing over watersheds and from steamers, especially on the great lakes, when perhaps a few minutes later another one will take in drinking water just where the foul matter from the first has been discharged. The locking of toilet doors on trains while traversing watersheds and while in stations causes considerable inconvenience to passengers, and it is doubtful whether in the case of watersheds the control is absolute. The use of steam for the disinfection of sewage was suggested by Professor Earl B. Phelps in March of last year, and applying this suggestion to the special problem of train and steamer sewage disposal, Leslie C. Frank, sanitary engineer in the Public Health Service, has devised a plan which he has successfully carried out in the preliminary experiments carried on at the Hygienic Laboratory.[1] This plan includes an automatic disinfection of the sewage of a train or steamer by use of heat generated by the power from its propelling engine. There is an insulated container 12 to 15 inches high and 12 to 15 inches wide, and 4 feet long. The contents are automatically discharged when they reach the boiling point. The device is not limited to steam as a heating agent. For the steam may be substituted electric heating elements, a coil of pipe carrying the exhaust from a gasoline engine, or direct heat from gas or gasoline burners. It is, therefore, apparent that this plan is applicable to the disinfection of sewage from practically all forms of common carriers. It is estimated that the cost of construction uninstalled would be about $16 for each steamer toilet and about $15 or $20 per coach on trains. Using steam as a heating agent, the cost of disinfection on steamers would be $1 per thousand closet flushes, and on trains 7½ cents per thousand flushes. Estimates of toilet usage indicate that the cost per toilet would be 5 cents a day on steamers and 1½ cents a day on coaches. Thus economy of resources as well as economy of health would be attained by the process thereby deserving the approbation of the business public as well as the professional public.

---

[1] Sewage Disinfection for Vessels and Railway Trains, Leslie C. Frank, U. S. Public Health Report, January 1, 1915.

◆

MEDICAL NOTES.

SMALLPOX AT VERA CRUZ.—Report from the American consul at Vera Cruz, Mexico, on Jan. 6 states that smallpox is now epidemic in that city. The number of cases is not given.

MENINGITIS AMONG CANADIAN TROOPS.—A cable report to Fredericton, N. B., on Jan. 7 states that 30 cases, with 10 deaths, of cerebrospinal meningitis have recently occurred among Canadian troops in camp on Salisbury Plains, England.

PLAGUE INFECTION AND ERADICATION IN NEW ORLEANS.—The weekly report of the United States Public Health Service for Dec. 25, contains a detailed list of thirty cases of human bubonic plague recognized and reported in New Orleans at the time of the outbreak in that city last summer. The last case occurred on Sept. 30. There is also an epidemiologic study of a plague focus in New Orleans by Dr. Charles B. Akin, illustrated by five excellent plates. The importance is emphasized of thorough destruction of rat hiding places and thorough closure of all holes in brick walls on premises where plague has been found, to preclude the possibility of mouse infection.

AUSTRIAN ACADEMY OF SCIENCES.—The Austrian Academy of Sciences has recently awarded to Professor Wagner von Jauregg the sum of five thousand marks for his research on the etiology of goitre.

HUNTERIAN ORATION.—The Hunterian Oration of 1915 will be delivered on Feb. 15 before the Royal College of Surgeons of England by its president, Dr. Sir Watson Cheyne.

AN IMPORTANT MEDICO-LEGAL DECISION.—On Jan. 7 an important decision was rendered by a New York surrogate to the effect that a child born with a beating heart is alive, even if it never cries, and may inherit property. Hitherto the English common law has held that the first cry legally constitutes life, and that a child which never cries is stillborn. From a medical standpoint, of course, it is primarily the heartbeat which renders a child living, since the fetus is alive while *in utero.* It is a matter of indifference whether oxygenation is obtained through the lung or the placenta. This decision, if sustained, will be of importance in future litigation concerning the reversion of estates falling to children stillborn or dying soon after birth.

FOOT AND MOUTH DISEASE.—Report from Baltimore on Jan. 10 states that a human case of foot and mouth disease has been discovered in a medical student of that city.

Statistics recently published in the January issue of the *Metropolitan* show that the latest European epizoötic of foot and mouth disease originated in Russia in 1886.

"Four years later statistics collected in the German Empire showed that nearly half a million head of cattle, more than a quarter million of sheep and goats, and more than a sixth of a million of swine were victims of the disease. In 1871 the infection cost France over seven million dollars; in 1883 England stood a loss of five million dollars.

"Dr. Cope, of the British Board of Agriculture, said at the International Congress of Veterinary Surgeons at Baden-Baden: 'It is true that the foot and mouth disease rarely assumes a fatal character, but the fact that nearly all classes of animals on the farms are susceptible renders the indirect losses much greater in the case of foot and mouth disease than in rinderpest or pleuro-pneumonia, which only affect cattle. In my country, where it existed for at least fifty years, it caused enormous loss—greater than that of all the contagious diseases of animals combined.'

"Dr. Loeffler, an authority, says: 'Foot and mouth disease is spreading more and more every year, and every year it costs the German Empire enormous sums. Necessary measures had been taken with the greatest care; suspected grounds had been closely quarantined; this measure had been extended to whole communes, and even to entire districts; disinfection had been carried out carefully, and, notwithstanding all this, the disease kept spreading.'

"For eight years England barred the importation of all cattle from countries where the disease was known to have a foothold."

EUROPEAN WAR NOTES.—It is announced that the Harvard Medical School will probably organize an expedition of surgeons, nurses and assistants to take charge of a ward in the American Ambulance Hospital at Neuilly (Paris). Similar expeditions have already been sent by the Jefferson Medical School and by Western Reserve University. To make the project possible a fund of $10,000 must be raised, and if this can be done, it is hoped that the expedition may sail for France about the first of April.

Sir Frederick Treves has recently presented to the British Red Cross a report of his tour of inspection of its field hospitals in the north of France:—

"This report stated that the value and efficiency of British Red Cross work in France could be well gauged by a visit to the store-shed at Boulogne, by a study of the postings of the fleet of motor ambulances, and by the distribution of the surgeons, nurses, and orderlies in the employment of the Joint Committee.

"The store at Boulogne contained the infinite variety of articles that come under the heading of Red Cross supplies, and the huge depot is described as a model of efficiency. The fleet of motor ambulances Sir Frederick considers to be the most valuable form of voluntary service ever rendered to the Army Medical Department. The ambulances are working everywhere, bringing down patients and returning with stores for the wounded. In the saving of life, the lessening of suffering, and in securing prompt surgical treatment of the wounded, the ambulances have done a work the value of which can hardly be exaggerated. Their efficiency in removing the wounded from the hospital trains to the wards or ships is a revelation to those who have only seen horse or hand carriage in operation.

"The personnel of the Society is dispersed in many directions. Many surgeons are attached to the military and auxiliary hospitals, others are with motor convoys, or with trains or at rest stations. A few are with French troops.

"Valuable work is done at Boulogne by a British Red Cross voluntary aid detachment located in seven railway wagons standing in a siding. There is a dispensing store, a surgery equipped with all necessaries for an emergency dressing station, and a kitchen from which at any hour of the day or night tea or cocoa and other refreshments are supplied to the wounded passing through. Three fully trained hospital nurses are included in the staff, and they render innumerable little services to the wounded. As many as 2300 men have been fed in one day at this station."

On Jan. 16, the total of the New York Belgian relief fund amounted to $841,645.82; the New York Red Cross fund to $439,464.01; the American Ambulance Hospital fund to $304,344.68; the Jewish relief fund to over $300,000.00; the American Women's war relief fund to $219,550; the Prince of Wales fund to $103,513.88; and the Committee of Mercy fund to $101,028.81.

On Jan. 17, the total of the New England Belgian relief fund amounted to $177,999.93; the Massachusetts Red Cross fund to $101,042.02; the Boston branch of the American Ambulance Hospital fund to $50,996.45; the Boston Jewish relief fund to $25,181.10; the Boston German relief fund to $22,326.94; and the Boston Polish relief fund to $11,734.21.

BOSTON AND NEW ENGLAND.

HOG CHOLERA IN BROOKFIELD.—Report from Brookfield, Mass., on Jan. 7 states that a valuable herd of Yorkshire swine in that town has been found to be infected with hog cholera, of which 10 swine have already died.

MASSACHUSETTS GENERAL HOSPITAL TRAINING SCHOOL.—The graduating exercises of the training school for nurses of the Massachusetts General Hospital were held in Boston on Friday evening of last week, Jan. 15. The principal address, by Miss Mabel T. Boardman, chairman of the national relief board of the American Red Cross, will be printed in a subsequent issue of the JOURNAL. Diplomas were awarded to a class of 54 nurses, two of whom presented graduation essays.

CASE OF TRYPANOSOMIASIS AT TEWKSBURY.—Report from Lowell, Mass., states that on Jan. 9 a patient died of trypanosomiasis at the Tewksbury State Infirmary. The patient was a native of Cape Verde Islands and removed recently from New Bedford, Mass., to Boston. His is the first recorded death from the disease in this state. He was thirty-five years of age.

MILK AND BABY HYGIENE ASSOCIATION.—At a recent meeting of the Boston Milk and Baby Hygiene Association, the directors' report stated that during the year 1914 the Association cared for 4097 babies. The total attendance at the weekly clinics for well babies was 19,673, an increase of 43% over that of 1913. The nurses made 41945 visits to the homes of patients in 1913, and 50,221 in 1914.

ROBERT BENT BRIGHAM HOSPITAL.—At a recent meeting, Dr. Robert B. Dixon and Dr. Joel E. Goldthwait of Boston were reëlected members of the board of directors of the Robert Bent Brigham Hospital.

BOSTON DISPENSARY.—At a recent meeting of the medical staff of the Boston Dispensary, Dr. John D. Adams was elected president, Dr. Frederick C. Cobb, vice-president, and Dr. Elmer W. Barron secretary and treasurer.

A meeting is to be held under the auspices of the Dispensary at Hotel Tuileries on Thursday evening, Jan. 21, at which the principal address, on "Dispensaries as a Growing Factor in Curative and Preventive Medicine," will be by Dr. S. S. Goldwater, health commissioner of New York City and formerly superintendent of Mt. Sinai Hospital, New York. There will also be addresses by Dr. Allan J. McLaughlin and Dr. Edward H. Bradford.

BOSTON HOMEOPATHIC MEDICAL SOCIETY.—At the annual meeting of the Boston section of the Massachusetts Homeopathic Medical Society, on Jan. 7, Dr. Frederick W. Colburn was elected president for the ensuing year. Dr. B. T. Loring was elected first vice-president; Dr. Frederika Moore, second vice-president; Dr. H. E. Diehl, secretary; Dr. Rudolph Jacoby, associate secretary; Dr. E. W. Smith, treasurer; Dr. W. O. Mann, auditor; Dr. O. R. Chadwell. Dr. E. S. Calderwood and Dr. F. R. Sedgley, censors.

BOSTON ASSOCIATION FOR RELIEF AND CONTROL OF TUBERCULOSIS.—A conference on communicable diseases and their relation to the handling of food was held under the auspices of the Boston Association for the Relief and Control of Tuberculosis on Tuesday of this week, Jan. 19, at the Twentieth Century Club, with Dr. Edward O. Otis as presiding officer. The following ten-minute addresses were presented:

"Dangers in Handling Food by Persons Afflicted with Communicable Diseases," Allan J. McLaughlin, M.D., state health commissioner; Harry Linenthal, M.D., state health inspector, Boston.

"Tuberculosis in Its Relation to the Handling of Food," Cleaveland Floyd, M.D., director of out-patient clinic, Boston Consumptives' Hospital.

"Dangers from Syphilis," Abner Post, M.D., professor of syphilis, Harvard Medical School.

"Some Suggestions in the Employment of Labor," T. K. Cory, vice-president and store manager, William Filene's Sons' Co.; Henry Abrahams, secretary Central Labor Union.

The Association has recently issued a circular letter calling attention to its need for funds in continuation of its work during the coming year. Attention is also called to the Prendergast Camp, where 88 patients are waiting admission to some sanatorium; to the legislative work; the formation of an anti-tuberculosis league; coöperation with the Consumptives' Hospital in obtaining an appropriation to add 125 more beds in that institution; the distribution of 66,000 pieces of educational literature; illustrated lectures and exhibits in hospital clinics and fairs. A great amount of educational work is waiting to be done, and those who realize the importance of preventive measures for public health are asked to aid in the support of the Association.

Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JANUARY 2, 1915.

1. *CHAPIN, H. D. *Are Institutions for Infants Necessary*
2. *HARRIS, L. T., AND OGAN, M. L. *Experiences of the New York Health Department in Typhoid Immunization.*
3. *ASH, J. E. *The Pathology of the Mistaken Diagnosis in a Hospital for Advanced Tuberculosis.*
4. *CARLSON, A. J. *Contributions to the Physiology of the Stomach. XXI. The Supposed Action of the Bitter Tonics on the Secretion of Gastric Juice in Man and Dog.*
5. *FRASER, J. *The Etiology and Pathology of Bone and Joint Tuberculosis.*
6. RYERSON, E. W. *Recurrent Spondylolisthesis, with Paralysis: Bone Splint Transplantation.*
7. *ADAMS, B. B. *The Causes of Scoliosis and Their Relation to Treatment.*
8. GUITERAS, G. M. *Plague in Havana.*
9. *NEW, G. B. *Cystic Odontomata.*
10. *IVY, R. H. *Mesothelial Tumors of the Jaws.*
11. RYTINA, A. S. *The Radical Removal of the Verumontanum, with Notes on Pathology.*
12. RANDALL, A. *The Endoscopic Treatment of Nocturnal Pollutions.*
13. CRAIG, C. L. *Anarthria Due to Syphilis.*
14. SCHMITTER, F. *Sprue Treated by Emetin Hydrochlorid.*

1. Chapin believes that large institutions for the care of infants are undesirable, that the infant has great need of individual care which can never be given in an institution; where the spread of infections, to which the infant is particularly susceptible, are liable. Boarding out with a trained nurse is the next most desirable condition to that of the home.

2. These authors again speak for the great value of anti-typhoid vaccination. They warn against giving it to pregnant women or during the menses. Severe reactions have never left permanent injuries. The vaccine is in no way an antitoxin but only a preventive. Chronic illness (tuberculosis, etc.), as well as debility from other causes, fatigue and exhaustion, predispose to severe reactions. Injections after intimate or long exposures hasten the onset.

3. Ash's paper bears a timely note of warning in regard to mistaken diagnoses in tuberculosis. The paper is of interest.

4. Carlson believes he has proved that the so called stomachics or bitter tonics have no influence other than psychic or, increasing secretion of gastric juice.

5. This paper is a thorough and interesting review of this subject to date.

7. Adams' paper is a well thought out analysis of this subject.

9 and 10. These two papers are of very practical interest and are well illustrated by x-ray and pathologic plates.

12. Randall seems to have made a decided advance in detecting the pathology of these cases.

[E. H. R.]

THE LANCET.

DECEMBER 5, 1914.

1. *GOODALL, E. *The Croonian Lectures on Modern Aspects of Certain Problems in the Pathology of Mental Disorders.*

2. Iredell, C. E. *A Case of Leprosy Treated with Radium and Diathermy.*
3. Taylor, S. *On Some Cases of Anomalous Fever.*
4. Benians, T. H. C. *Glycerine in Bromidrosis, with a Note on Military Needs.*

1. In the first Croonian Lecture, Goodall discusses certain aspects in the pathology of mental disorders. He discusses first the dementia precox group of cases and gives a general review of the findings of various observers of pathology, with particular reference to inoculation experiments and the presence of spirochetes and other organisms in the brain cortex. He takes up the subject of disorders of metabolism in insanity, and the value of thyroid administration in mental disorders and in epilepsy with insanity. He presents a very long and elaborate bibliography. [J. B. H.]

December 12, 1914.

1. *Goodall, E. *The Croonian Lectures on Modern Aspects of Certain Problems in the Pathology of Mental Disorders. Lecture II.*
2. Makins, G. H. *Note on the Wounds of the Soft Parts Produced by the Modern Bullet.*
3. Scott, J. W. *Note on a Fatal and Exceptionally Intense Infection with Malaria (P. Falciparum).*
4. Pronger, C. E. *Insomnia and Suicide.*
5. Simpson, W. J., and Hewlett, R. T. *Experiments on the Germicidal Action of Colloidal Silver.*

1. In the second Croonian Lecture, Goodall discusses the relation of the ductless glands to mental disease, and then considers constipation and other disorders of the gastro-intestinal organs as causes of auto-intoxication and their possible bearing in mental disorders. He devotes considerable time to the subject of leucocytosis in various mental disorders, especially dementia precox, epilepsy, and melancholia. [J. B. H.]

British Medical Journal.

December 5, 1914.

1. Bland-Sutton, J. *The Value of Radiography in the Diagnosis of Bullet Wounds.*
2. *Lindsay, J. A. *The Threshold of Disease.*
3. *Wilkie, D. P. D. *Acute Appendicitis and Acute Appendicular Obstruction.*
4. Shipley, A. E. *Leeches; Exotic Leeches.*
5. Jung, C. G. *On the Importance of the Unconscious in Psychopathology.*
6. Jones, E. *The Significance of the Unconscious in Psychopathology.*
7. MacKenzie, T. C. *Some Considerations Regarding Insanity in the Highlands.*
8. Turner, W. A. *Epilepsy and Cerebral Tumor.*

2. Lindsay, under the very suggestive title, "The Threshold of Disease," discusses the early diagnosis of endocarditis, cancer of the stomach, disseminated sclerosis, and pulmonary tuberculosis, devoting special attention to the diagnosis of pulmonary tuberculosis. He discusses the various well-known methods and the less known modern methods of diagnosing this condition, and reaches a very sane conclusion that there is "no sure short cut to a summary diagnosis of incipient pulmonary tuberculosis at present available."

3. Wilkie discusses acute appendicitis and its relation to acute appendicular obstruction. It would seem to be a rather fine point further to subdivide cases of appendicitis in this way. He discusses in detail the various forms of obstruction and their causes. [J. B. H.]

Edinburgh Medical Journal.

December, 1914.

1. *Ross, J. N. MacB. *Some Observations upon Primary New Growths of the Mediastinum from a Study of Sixty Cases.*
2. **Collective Report. Perforated Gastric Ulcer.*
3. Fowler, J. S. *The Nutritive Diseases of Infancy: A Review.*

1. Ross gives an excellent study based on sixty cases of new growths of the mediastinum. Malignant disease of the mediastinum is not so rare as is generally supposed, whereas innocent tumors are very unusual. It is essentially a disease of early middle life, twice as common in males as in females, and seems to be increasing in frequency. A definite history is often found, and is commonly one of malignant disease. Though tubercle bacilli are rarely present in the sputum, there is possibly some relationship between pulmonary tuberculosis and new growths of the mediastinum. The anterior mediastinum is the common seat of origin. Lympho-sarcoma is the commonest form of the disease. The lungs are practically always affected sooner or later, and pulmonary symptoms are generally present. The right lung is much more frequently affected than the left lung: Extrathoracic metastases are very common and often very palpable. Pyrexia, if present, is due to some complication supervening upon, or caused by, the original condition. Microscopic examination of the sputum is rarely of value, although the persistent absence of tubercle bacilli in a case suggesting pulmonary tuberculosis is very significant. Hemoptysis, though moderately common, is rarely severe. A pleural effusion is often present, and is often hemorrhagic, but a hemorrhagic effusion is not pathognomonic of malignant disease. Examination of the fluid is rarely of diagnostic value. A large proportion of lymphocytes is quite as commonly found in a malignant as in a tuberculous effusion.

2. This article on perforated gastric ulcer is a collective report on a series of 247 cases treated in Edinburgh between 1896 and 1913. The data are presented in tabular form. There were 99 cases of gastric and 145 of duodenal perforation. The mortality was reduced from 70% during the period from 1896 to 1898 to 35% in 1909 to 1913. The majority of the patients were between 20 and 25 years of age.

In 146 instances, there was a previous history of indigestion or ulcer. The writers discuss the premonitory signs of perforation, the signs following perforation, and the site of the pain, vomiting, and the site of maximum tenderness and maximum resistance. The operative details and the exact position of the perforation and the conditions found on operation, are also described. Gastro-enterostomy was performed in 29 of the cases. [J. B. H.]

Deutsche Medizinische Wochenschrift.

No. 40. October 1, 1914.

1. Rubner. *Popular Food-Supply During War.*
2. Czerny, V. *Preparation in War Surgery.*
3. Lexer, E. *The Basic Principles of Present-Day War Surgery.*
4. *Grober. *The Clinical Aspects of Bacillary Dysentery.*
5. *Blaschko, A. *The Prevention and Treatment of Venereal Diseases During War.*
6. Hoffmann. *Naval Sanitation.*
7. Schuster. *The Organization of a Proper Public Health Service During the War. Part II.*
8. Mamlock. *Medico-Military Problems. (Review.)*
9. Liepmann, H. *Psychiatry During the Russian-Japanese War.*
10. Obendörffer, E. *Letters from the Battle Front.*

4. Dysentery has always been associated with the epidemiology of war. It is a hand to mouth infection, usually transmitted by a carrier through foodstuffs or drinking water, and is not caused by one specific organism but a variety of bacteria belonging to the same group. The essential pathological condition is an ulceration of varying severity found in the large intestine and less often in the lower part of the small intestine and appendix. The disease may be mild or rapidly fatal. It usually begins as a diarrhoea which becomes increasingly severe. As many as one hundred and eighty-six stools a day have been noted. The discharges are a first faecal, then contain mucous, pus and blood. Accompanying them is tenesmus and flatulence. Fever is usually absent. The pulse is slow and of poor quality. The urine may contain albumin and casts. Death occurs from exhaustion and is usually sudden. Recovery is gradual, and relapses occur frequently. Good therapeutic results have been reported from polyvalent serum. This can be given intramuscularly or intravenously but is by no means specific. Aside from this, the treatment is symptomatic. Grober advocates the early use of cardiac tonics such as camphor and digitalis, and a rather liberal typhoid diet. Finally, rigid isolation and sterilization must be enforced.

5. Blaschko believes that efforts should be made to check venereal disease in the present war by two methods. Firstly men and women must be closely supervised. When disease is discovered the patients must be hospitalized and kept under supervision until they have recovered. Secondly, Blaschko advocates general education of the soldiers upon venereal diseases and their consequences. For this purpose he has written a small pamphlet for distribution. This states simply that the men under arms owe their lives and health to their country; venereal disease is incapacitating; women camp-followers are a constant menace to the soldier's health. If any venereal disease is contracted Blaschko urges the individuals to report themselves to the physician in charge. [R. F.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

No. 46. NOVEMBER 17, 1914.

1. LIER. *Spirochetal "Rests"; the Abortive and Combined Treatment of Syphilis.*
2. CHILARDITE. *Further Contribution to the X-ray Treatment of Hypertriasis.*
3. MASAY. *Fetal Infections.*
4. WIEDHOPF. *A Case of Meaglocolon in a Man of Seventy.*
5. FRIED. *The Treatment of Furuncles.*
6. *MEYER. *A New Apparatus for the Treatment of Writer's Cramp.*
7. *HOCHLAUS. *The Treatment of Tetanus.*

8, 9, 10, 11, 12. *ALEXANDER, KUHNE, ROTHFUCHS, MÜLLER, AND KREUTER. *Articles on Tetanus.*

13. BAEYER. *Artificial Limbs.*
14. SCHNÉE. *A Clamp for Forcible Extension in Wounds of the Long Bones.*
15. HOTZ. *Wounds of the Nervous System.*

6. Meyer puts the hand in the proper position for writing and then makes a cast. This holds the hand in the proper position and prevents any spasm. This stiff glove is used until the tendency to contracture is over.

7, 8, 9, 10, 11, 12. Hochlaus reports his experiences in 46 cases of tetanus, and concludes by advising first the prophylactic use of serum, as powder in the wounds and subcutaneously; when tetanus is present the intraspinal and intravenous use, together with morphia and subcutaneous use of $Mg.SO_4$. Kreuter treated 31 cases entirely by intraspinal and intravenous use of large doses of serum, with a mortality of 35% as against other lists of cases showing 57 to 62% mortality. He says the magnesium sulphate and carbolic acid treatment are useless. Müller has seen very little result from the use of magnesium sulphate and serum, although he uses serum right along. He found very hot baths to be a great help. In two cases he had relief from tracheotomy. Rothfuchs used salvarsan with benefit in four cases. Kühn used luminal, about 1 gm. per day. Alexander gave eight cases 10 gm. of chloral per day in a single day and all recovered; two with 5 gm. died. [E. L. Y., JR.]

BERLINER KLINISCHE WOCHENSCHRIFT.

No. 40. OCTOBER 5, 1914.

1. VIRCHOW, H. *The Position of Thoracic Organs in Extreme Kyphosis.*
2. KOHNSTAMM, O. *Interruption of the Mind and Cyclic Insanity.*
3. *MARCUSE, E. *The Roentgenologic Diagnosis in Stenosis of the Small Intestine.*
4. UNNA, P., JR. *New Experiences in the Treatment of Smallpox Pitting.*

3. Marcuse discusses the x-ray diagnosis of stenosis of the small intestine, with particular reference to the portions between the proximal loop of the jejunum and the terminal loop of the ileum. Filling defects, retention, and changed peristalsis are given as possible but not constant or pathognomonic signs. Emphasis, however, is focused on dilatation of the intestinal loop proximal to the stenosis, which gives an x-ray picture of a ball partly filled with fluid and partly with gas. These hollow balls may persist for 24 hours, and may be so pronounced that they may occasionally be seen without the use of bismuth. Small intestine air bubbles can be easily distinguished from gas in the stomach, duodenum, colon, penetrating ulcers of subdiaphragmatic abscess. The variety of stenosis cannot be accurately determined in the small intestine by this sign, because only the dilated and not the stenosed portion of the gut is seen. [G. A. L., JR.]

WIENER KLINISCHE WOCHENSCHRIFT.

No. 41. OCTOBER 8, 1914.

1. *KOWARSCHIK, I., AND KEITLER, H. *Diathermia in Gynecological Disease.*
2. ROSENFELD, S. *Notifiable Infectious Diseases in Vienna.*

1. The authors cite fifty cases of gynecological disease treated by diathermia, with forty-two immediate cures. They believe, therefore, it has a place in the treatment of such cases. [F. S. K.]

No. 42. OCTOBER 15, 1914.

1. *PASSINI, F. *Lumbar Puncture in Chorea.*
2. ROSENFELD, S. *Notifiable Infectious Diseases in Vienna, Years* 1901-1910.

1. The author used lumbar puncture in five very severe cases of chorea. Three cases responded, two did not. [F. S. K.]

No. 43. OCTOBER 22, 1914.

1. *KRAUS, M. *Dentistry for the Wounded.*
2. ROSENFELD, S. *Notifiable Infectious Diseases in Vienna,* 1901-1910.

1. This article is a plea for immediate care of the teeth and pain in soldiers after wounds, and shows how much better the results are if done early than if done later after callus formation. [F. S. K.]

No. 44. OCTOBER 29, 1914.

1. *GLASER, O. *Chronic Veronal Poisoning.*
2. HERSCHMANN, H. *Psychic Changes Following Resuscitation After Hanging.*

3. Infeld, M. *Paradoxic Cerebral Hemorrhage from Trauma.*
4. Joachim, A. *Tuberculin Treatment in Progressive Paralysis.*
5. Muller, H. *Case Histories of Two Paralyses of Musculo-Cutaneous.*
6. Raimann, E. *Hysteria.*
7. Redlich, E. *Statistics on the Etiology of Nervous and Mental Diseases.*
8. Reznicek, R. *Dermographism.*
9. Wexburg, L. *Late Gastric Tetanus.*

1. The author cites ten cases of chronic veronal poisoning. It results from continued use for some months. The symptoms are referable to the nervous system and the bowels and kidney action is depressed. [F. S. K.]

No. 45. November 5, 1914.

1. Kraus, R. *Vaccination and Treatment of Typhoid.*
2. Finger, F. *Venereal Disease and the War.*
3. Frankl, O., and Kimball, C. *Influence of X-ray on Mouse Tumors.*
4. Rosenfeld, S. *Notifiable Infectious Diseases in Vienna* 1901-1910.

No. 46. November 12, 1914.

1. *Marburg, O. *Gun Shot Wounds of the Skull.*
2. v. Haberer, H. *Thirteen Gun Shot Aneurysms.*
3. Bernheimer, S. *Gun Shot Wounds of the Eyes.*

1. The authors conclude from thirty-three cases that in cases in which the bullet strikes at a tangent if there is evidence that the bone has been depressed operation is indicated. Operation is also indicated in cases in which the projectile enters direct and lodges close to the surface. Non-operation except for pressing symptoms is the better rule for deep-seated projectiles. If brain tissue is cut it indicates so generalized a process that non-interference is the rule. [F. S. K.]

No. 47. November 19, 1914.

1. Riehl, M. *Treatment of Phlegmons in Continuous Bath.*
2. *Arzt. *Cholera and Cholera Vaccination.*
3. Suchaueh, E. *War Phlegmons.*
4. Hosna, E. *Comparative Meteorology at Sea Resorts.*

2. The author cites 25 cases of cholera. He treats the cases by rubbing the body with camphor during the cramps, injecting salt solution. After the first collapse he gives colus alba. Two cases seem to have been aborted by vaccination early. [F. S. K.]

Deutsche Zeitschrift für Chirurgie.

Band 131. Heft 1-6.

August-October, 1914.

1. Drachter, R. *Cleft Palate and Its Operative Treatment.*
2. Richter, R. *Volvulus in Hour-Glass Stomach.*
3. Torek, F., *Interpleural Pneumolysis: An Operative Procedure in Pulmonary Tuberculosis.*
4. Mertens, G. *Anatomo-Technical Study on the Question of Pneumolysis.*
5. Faltin, R. *The Knowledge of Pneumotosis Cystoides of the Intestines.*
6. Kawamura, K. *Experimental Studies on Pulmonary Extirpation.*
7. *Wagner, A. *Cases and Operation of Obturator Hernia.*
8. Brandes, M. *Observations on Juvenile Osteochondritis Deformans.*
9. Jenckel. *The Pathology and Treatment of Acute Pancreatic Necrosis.*
10. *Stierlin, E., and Vischer, A. L. *Surgical Observations on All Stages in the Serbo-Turkish War, 1912-1913.*
11. *Ozaki, Y. *The Bacteriologic Significance of the Secretions of the Skin Glands in Aseptic Surgery.*
12. *Bolognesi, J. *The Pathogenesis of So-called Bone Cysts.*
13. Jianu, A. *Oesophagoplastic.*
14. Fischer, H. *Diabetes and Surgery.*
15. Hartung, H. *Hemorrhoidal Knots in the New born, with a Contribution to the Etiology of Hemorrhoids.*
16. Frankenthal, L. *Cystinuria and Cystin Stones.*
17. *Simon, W. V. *Paranephritic Abscess.*
18. Schumkowa-Trubina. *The Abderhalden Reaction in Carcinoma.*
19. Kaspar, F. *The Clinical and Surgical Treatment of Chronic Duodenal Ulcer.*

7. From Roth's surgical clinic at Lübeck, Wagner reports a case of obturator hernia, and discusses the various operative methods of treating this condition.

10. At the present juncture there is much timely interest in this article by two Swiss surgeons from Basel on their military surgical experiences during the recent Balkan war with Turkey.

11. As a result of bacteriologic experiments at Ito's surgical clinic in Kyoto, Ozaki expresses his conviction that after thorough previous disinfection of the bands, the sweat secreted on the skin surface affords no new source of infection.

12. From Remedi's surgical clinic at Modena, Bolognesi reports experimental investigations on the etiology of bone cysts, and discusses the various theories of their origin,—congenital, traumatic, inflammatory, specific, parasitic, systemic, and neoplastic.

17. Simon's article, based on 35 cases of paranephritic abscess treated in Küttner's surgical clinic at Breslau, presents a complete study of the material, with full case reports. [R. M. G.]

Bullettino delle Scienze Mediche.

October, 1914.

1. *Forni, G. *Observations on a Hundred Tumors.*
2. Rocchi, G. *The Superficial Tension of the Blood in Experimental Intestinal Occlusion.*

1. This extensive article, by a worker in Martinotti's institute of pathologic anatomy at Bologna, constitutes a valuable monographic contribution to the study of neoplasms. [R. M. G.]

November, 1914.

1. *Montanari, A. *Experimental Stenosis of the Pulmonary Artery.*
2. Brincani, G. *Action of Salicylic Preparations on the Kidney.*

1. In this contribution to the study of the relation existing between hyperglobulia and congenital defects of the heart, Montanari concludes that it is possible to produce experimentally in rabbits stenosis of the pulmonary artery of notable degree. Such stenosis, he finds, is not accompanied by true hyperglobulia. [R. M. G.]

Il Policlinico.

Surgical Section.

October, 1914.

1. Uffreduzzi, O. *Separation of the Lower Epiphysis of the Femur, and Its Operative Cure.*
2. Mosti, R. *Common and Simple Appendicocele with Partly Adherent Sac.*

3. *Scalone, I. *An Exceptional Indication for Plugging for the Cure of a Suppurative Lesion of the Thyroid, and the Use of Plugging in Modern Surgery.* (*To be continued.*)

November, 1914.

1. Marogna, P. *Clinical Considerations on Seven Cases of Renal Tuberculosis.*
2. *Scalone, L. *An Exceptional Indication for Plugging for the Cure of a Suppurative Lesion of the Thyroid, and the Use of Plugging in Modern Surgery.* (*Conclusion.*)
3. Brancati, R. *The Gastro-Intestinal Ulcerative Effects of Experimental Resection of the Lumbar Sympathetic.*
4. Azara, P. *Fever in the Ovariectomized.*
5. Frattin, G. *Contribution to the Knowledge of Adenomata of the Sudoriparous Glands.*

2. Scalone presents the results of his experience in the surgical use of Beck's paste. The thyroid case reported was probably an instance of persistent thyro-glossal duct. [R. M. G.]

* * *

Obituary.

ALBERT VAN GEHUCHTEN, M.D.

Dr. Albert Van Gehuchten, professor of the anatomy, pathology and treatment of diseases of the nervous system at the University of Louvain, Belgium, died of acute volvulus at Cambridge, England, on December 9, 1914. He was born in Belgium in 1861 and pursued his medical education in the laboratory of Professor Carnoy and at Berlin and Frankfort. His first publication was in 1886 on the structure of muscle cells, in which he advocated the theory of the unity of cell structure. In 1887 he returned to settle at the University of Louvain, where he had been appointed instructor of anatomy. In 1890 appeared his second publication, a study of the olfactory mucosa of mammals, in which he first definitely entered the field of neurologic research. From this time he published in rapid succession a series of brilliant investigations in this department of science. His neurologic publications have been divided into four groups, which are described as follows in the issue of the *British Medical Journal* for December 26:—

"The first, appearing between 1890 and 1896, embraces a series of important publications bearing for the most part on the structure of nerve centres—the olfactory bulb, the structure of the optic lobes, the nerve cells of the sympathetic nervous system, cerebrospinal ganglia, etc. In this group our present-day conception of the neuron was placed on an unassailable foundation, namely, that the neuron comprises a cellular body, protoplasmic prolongations for cellulipetal transmission, and an axis cylinder prolongation for cellulifugal transmission, both kinds of prolongation having a free termination, the nerve conduction from one neuron to the other being affected by the contiguity of the end ramifications of the axis cylinder of one neuron to the protoplasmic prolongations of the neighboring neuron. The conception that the neuron appeared as an independent and fundamental unit was the solid basis upon which van Gehuchten built all his later researches on the true origin of nerves, and on the course of fibre bundles in the cerebrospinal axis. In 1897 began van Gehuchten's long and fruitful series of study on methylene-blue staining methods, a report on which he presented to the International Congress of Medicine at Moscow in that year. He found that this method was of greater value in the examination of the more intimate nerve structures and their modifications than that of Golgi, hitherto used, which had the disadvantage of being too coarse. Further research in this direction led to investigations on the phenomenon of chromatolysis, and all these investigations are important as forming the basis on which rested his study of the true origin of motor nerves. They gave rise to a number of works on nervous pathology, and were even applied to the complex study of organic lesions in mental affections, especially in dementia precox, and led to van Gehuchten's interesting discoveries on the pathological anatomy of dementia. He proved that the pathological process of rabies had a special predilection for the sympathetic spinal and cerebral ganglia, producing in the nerve cells of these ganglia primary modifications of a chromatolytic nature as well as secondary modifications due to the active proliferation of the endothelial capsule of the nerve cell, which leads to its destruction, and the formation of characteristic rabid nodules.

"The second group of publications, commencing in 1898, deals with the origin or termination of the peripheral nerves and the tract of certain bundles of neurons in the cerebrospinal axis, and, in these days of confused literature on the subject, form classic models by their compass, clearness and precision, as well as by the value and novelty of their conclusions. All these experimental researches, carried out by section, rupture, or more frequently by the extirpation of the nerve in rabbits, were corroborated by the study of comparative anatomy and embryology of the nervous system and by *post-mortem* investigations. Finally, by the discovery of a new method based upon the phenomenon of direct Wallerian degeneration, van Gehuchten gave an exactitude to the results of his studies of the intra-cerebral or medullary course of the motor nerves and certain central nerve tracts never hitherto attained. This indirect Wallerian degeneration was described by van Gehuchten in an exhaustive report presented to the international Congress of Medicine at Madrid in 1903. He showed that if, instead of dissecting a nerve it was torn out, degeneration followed not only of the peripheral but of the central portion of the nerve, such central degeneration being not retrogressive but descending, like that of the peripheral portion, this being due not to the direct separation of the nerve itself, but to the atrophy of the cells from which it originated and fatally injured by this violent traumatism. Having identified by this new method each one of the peripheral nerves, Professor van Gehuchten extended his ingenious researches into the complex field of the acoustic and olfactory nerve tracts, the central connections of Deiter's nucleus, the superior cerebellar peduncle, the cerebrobulbar fasciculus, etc., with most brilliant results. We would especially mention in this connection his study on the inhibitive fibres of the heart, a problem which has puzzled many celebrated physicians, but resolved by van Gehuchten, who directly traced the connection of these fibres to the pneumogastric nerve instead of to the spinal accessory.

"The third group of publications deals with problems of nervous pathology, including studies on the central motor neurone of the pyramidal tract, on acute anterior poliomyelitis in the adult, on the pathogenesis of decubitus, on Babinsky's phenomena, on aphasia and syringomyelia. Of his work bearing on the pyramidal tract the most important is that concerning the mechanism and seat of reflex movement, in which he showed that tendon reflex is independent of muscular tonicity, that section or compression of the medulla is accompanied, not by increase of reflex movements, but by disappearance of both tendon and cutaneous reflexes."

The fourth group of publications includes a dozen anatomies and text-books on the nervous system.

Dr. van Gehuchten was a distinguished clinician as well as a laboratory scientist of eminence. He rendered particularly valuable work in the localization of lesions of the central nervous system. He suggested important methods in the surgical treatment of cerebral and medullary tumors and in trigeminal neuralgia. He also proposed, and successfully accomplished, a less complicated method of resection of the postradical filaments instead of the posterior nerve roots. He was a brilliant teacher and investigator, and his premature death is a serious loss to science and to his unfortunate University.

Miscellany.

MEMORIAL RESOLUTIONS.

CHARLES SEDGWICK MINOT,
M.D., LL.D., D.Sc.

At the meeting of the council of the American Association for the Advancement of Science held in Philadelphia on December 29, a minute[1] was adopted in memory of Dr. Minot. The minute, which was presented by Professor Cattell and adopted by a rising vote, is as follows:—

"The council of the American Association for the Advancement of Science places on record its sense of irreparable loss in the death of Charles Sedgwick Minot and its appreciation of the value of his services to science, to education and to human welfare. Endowed with the best New England blood and traditions, trained there and in the schools of France and Germany, keen in intellect, wise in counsel, sure in action, sincere in friendship, he devoted his life to the advancement of science, the improvement of education, and the betterment of the agencies on which science and education depend. His contributions to embryology, anatomy and physiology gave him leadership in those sciences; his high ideals of education aided in advancing the standards of medicine in America and in placing the Harvard Medical School in its commanding position. Not only by his original researches, by his masterly books and by his fine addresses and lectures, but in countless other ways, he helped his fellow-workers in science—in the construction of microtomes; in the establishment of a standard embryological collection; in the improvement of bibliographical and library methods; in the unit system of laboratory construction, followed in the beautiful buildings of the Harvard Medical School; in the early development of the Marine Biological Laboratory at Woods Hole; in the Boston Society of Natural History, of which he was president for many years and until his death; in the Wistar Institute for Anatomy and Biology; in the administration of the Elizabeth Thompson Science Fund and the Bache Fund of the National Academy of Sciences; in international relations, as when visiting professor to Germany and in the foreign publication of his books; in the editing of *Science* and of journals of anatomy, zoology and natural history; in the founding and the conduct of the American Society of Naturalists and the Association of the American Anatomists; in the establishment of the convocation week meetings of scientific societies; for us especially by his leading part in the work of the American Association for the Advancement of Science, of which he was secretary of section, general secretary, twice vice-president, president, a constant member of the council, at the time of his death chairman of the committee on policy. In the American Association, as elsewhere, Charles Sedgwick Minot leaves a vacant place which can never be filled. We take up our work sadly in his absence; but we know that it will in all the years to come be more fruitful for the heritage of his service."

---

[1] Reprinted from the issue of *Science* for Jan. 8, 1915.

THEODORE WILLIS FISHER, M.D.

These resolutions on the death of Dr. Theodore W. Fisher were adopted at a meeting of the Boston Society of Psychiatry and Neurology:—

Dr. Theodore Willis Fisher, an original member of this society, was born in Westboro, May 29, 1837, and died October 10, 1914. He was educated in the schools of Medway and Williston Seminary and Phillips Academy of Andover, and graduated at the Harvard Medical School in 1861. He was a surgeon of the 44th Regiment in the Civil War. He was appointed superintendent of the Boston Lunatic Hospital in 1881 and resigned from that position in 1895. For several years he examined for the public institutions commissioner of Boston most of the insane committed to the state insane hospitals from that city, and saw many cases of mental disease in consultation. Later he was appointed lecturer in mental diseases in the Harvard Medical School. In the seventies, he was the leading expert in his branch in Boston and was frequently called on to testify as a witness in court. He was active in all matters concerning the welfare of the insane and earnestly advocated a new hospital for the insane of Boston. He largely planned the Danvers State Hospital and the buildings first erected by the Boston Lunatic Hospital at West Roxbury. He belonged to many medical societies and was president of this society in 1893.

He was the author of a number of papers. Among these was one entitled, "Was Guiteau Sane and Responsible for the Murder of President Garfield?" published in the Boston Medical and Surgical Journal in 1888. He could speak with some authority on this subject as he was employed as an expert in the Guiteau trial. As showing his interest in medical progress, mention may be made of a paper he published in 1889 on "Cortical Localization and Brain Surgery," and another on "The New Psychology," in 1893. Until the last few years of his life, Dr. Fisher continued to be prominent as an energetic worker in the field of mental disease. Unfortunately for his co-workers, he became disabled and was obliged gradually to relinquish the duties which he had performed so well.

Resolved, That this society wishes to place on record its appreciation of the services performed for many years by Dr. Fisher as a progressive and active leader and teacher in the field of mental disease, and its regret that the last years of his life were rendered hard for him by incapacitating illness. It also wishes to record the loss it feels this society has sustained in the death of a faithful and valuable member and kind friend.

Resolved, That a copy of these resolutions be sent to the family and printed in the Boston Medical and Surgical Journal.

Walter Channing,
George T. Tuttle,
Edward Cowles.

GEORGE DEXTER BULLOCK, M.D.

The following memorial resolution was adopted by a rising unanimous vote at the latest regular meeting of the Norfolk South District Medical Society:—

George Dexter Bullock was born in Taunton, December 6, 1859, and died in Weymouth, on his birthday, December 6, 1914. His elementary education was received in his native city, after which he entered the New Hampton Literary Institution, New Hampshire, in 1878, graduating from that institution in June, 1881. He then entered the Jefferson Medical College of Philadelphia, graduating in 1885. Two years later he began the practice of his profession in Weymouth. Dr. Bullock was the son of a physician, from whom no doubt, he inherited many of his nice ethical qualities, which he exhibited in his intercourse with his brother physicians. His successful twenty-seven years of practice in Weymouth were marked by love of his profession by his strict consideration for the rights of his brother practitioners, and his entire honesty with his patients. It could not have been otherwise, for he possessed the qualities of head and heart that are so essential to the fulfillment of such honorable traits. Dr. Bullock was a man of decided opinions, always adhering strictly to that which he thought was right. He was a man of kindly disposition, agreeable to meet, either as a physician or man, and absolutely true to his friends. Our sympathies go out to his bereaved family—widow and daughter—who will mourn him. The community in which he lived will miss him, and the South Norfolk District Medical Society will feel the loss of a valuable member.

J. C. Fraser,
E. N. Mayberry,
V. M. Tirrell,
Committee.

ANGELL MEMORIAL HOSPITAL.

The new building of the Angell Memorial Hospital for Animals, on Longwood Avenue, Boston, has been recently completed and informally opened, and will soon be occupied for work.

"The hospital is built around a central court for large animals, which enter by the front and are received and taken to various special rooms for appropriate treatment. Most of the novelties of the arrangement are on the first floor level, which is somewhat above the grade of the entrance roadway. The left-hand wing of this first floor is devoted to the offices of the agent and superintendent and the right of the main arched way is the entrance to the business office of the hospital and the clinic for small animals. The right-hand wing, next to the Harvard Dental School, and the rear wing are also given up to the treatment of larger animals. Midway of the right wing is the horse clinic, comprising an operating room and the soak stall room. This latter is a very important feature, tested by the experience of the Veterinary Hospital of the University of Pennsylvania.

"Operating facilities for large animals are exceptionally complete. One of the most interesting devices is the horse operating table, which consists of a huge tilting leaf of planks. The horse about to be operated upon is made to stand against this leaf in a vertical position and is securely strapped to the leaf, then the leaf is tilted over into a horizontal position, and there is the patient on a proper operating table. After the operation, the leaf or tilt, with the horse still strapped to it, is carried to the surgical ward, where the horse is unstrapped and slid off to a tan-bark floor, where he may recover at leisure from the anesthetic.

"In the middle of the rear wing are the medical wards, cut by brick walls into two sections which are subdivided into stalls. In the back left-hand corner is a roomy contagious ward and towards the front of this ward are two brick enclosed stalls for horses suspected of contagious disease. Still further towards the front of the building is a large tan-bark space 30 by 37 feet, where horses suffering from 'black water,' and some other troubles which lead them to kick may be allowed to lie out and thrash around at their pleasure.

"On the second floor of the wing are several wards for small animals and an exercise room, and in the right wing the operating room for small animals, the bacteriological laboratory, wards with cages for small animals, in the back right-hand corner a kitchen for small-animal food. An open corridor surrounds three sides of the central open court on this level, and not only furnishes more exercise ground but provides various effective ventilation through all the second floor rooms. Exercise yards for small animals have been provided on the roofs of the wings, which may later be raised by an additional story if the work of the hospital requires it. So far, provision has been made for horses and small animals; but the whole basement has been excavated so that there is ample room for dealing with hogs and sheep.

"In the central, or memorial portion of the building, the second story is occupied mainly by the offices of the president and treasurer, the library, and by the marble-paved central corridor, back of which is a memorial hall in which the names of contributors to the fund of the society will be preserved in large books mounted in cabinets. On the top of the central section is the publication department, and directors' room and committee and work room."

LARREY AT WATERLOO.

OF particular interest at the present time is the account of Baron Larrey, the great French Napoleonic surgeon, at Waterloo, and his subsequent treatment and care at Louvain, the history of which appears in *La Chronique Médicale,* written some time before the outbreak of the present European war. Professor Masoin of Louvain is the author of the communication.

"At a late hour in the terrible day of Waterloo, Baron Larry retired at the head of his small surgical force, when suddenly he found his retreat blocked by Prussian soldiers. Not knowing the strength of the column, the corps of physicians attempted to force a passage, but were hurled back by a solid wall of Prussians. The Baron's horse fell, wounded by a musket ball, Larrey receiving two sabre wounds, one on the head, the other in the shoulder, which rendered him unconscious. Coming to his senses after a time, he tried to crawl away, but was seized again by the Prussian cavalry, who subjected him to many brutalities and insults. The wounded Larrey's clothing was removed and his captors, noting its richness and the costliness of his accoutrements, thought they had captured Napoleon himself. Larrey was taken from post to post with this idea, finally being brought before a general who, recognizing the soldiers' mistake, was furious and ordered the unfortunate prisoner to be shot immediately. The firing squad was ready to do its duty, when a surgeon approached to blindfold the prisoner. Suddenly recognizing Larry, whose student he had previously been, the surgeon cried out it was impossible to put to death the great Larrey in such a manner. Evidently, his request for a reprieve was granted, for they set out on the march and Larrey was taken before General Bülow, who sent the prisoner on to the famous Blücher. This proved to be not only lucky for Larrey but resulted in his complete safety, as one of Blücher's sons had been saved by Larrey during a military campaign in Germany. An escort was given and Larrey sent to Louvain for treatment. Here he was under the care of Dr. Michotte, surgeon to the civil hospital, and of Dr. Hubert Vandepoël of the military hospital. The medal of St. Helen was later given to Dr. Vandepoël in recognition of his services to Dr. Larrey. Louvain was proud to have two of her surgeons care for and cure the battle wounds of the famous Larrey."

The first part of the account of Larrey's capture and journey to Louvain is well known to all, but the details of his treatment and stay in the city were, according to the article, not generally known before Professor Masoin's account. The latter's description is so graphic concerning Louvain and the war which caused Larrey's stay there, that one has for a moment a vivid idea that it must be of the present European struggle that one is reading, so nearly does history seem to have repeated itself.

INTRAVENOUS MEDICATION IN THE SEVENTEENTH CENTURY.

It is not generally recognized at what a very early date intravenous medication was practiced, but a recent article in *La Chronique Médicale* gives interesting light on this subject. In a work by Michel Etmuller, published in Amsterdam by Jean Aubie in 1691, the following occurs:

"For some time there has been a new method of introducing remedies into the body by injecting them immediately into the veins, which is known as infusion." He goes on, according to the article, to give the different reasons for which such treatment was given. "The English," said Etmuller, "were the first to practice this method, and it is probable that Voren, at that time a professor at Oxford, was the first to use the method. At the hospital at Dantzig the method was used also, and an intravenous infusion of scammony in guiac was given to a soldier with an inveterate syphilis with ulcerations of the legs and a tumor of the right arm. After the injection, he vomited, but in 24 hours the symptoms disappeared. The ulcers were healed in three days."

How like an account of the present intravenous use of salvarsan this recognized therapy of 220 years ago sounds.

Correspondence.

SURGICAL INSTRUMENTS FOR THE BELGIANS.

Boston, January 9, 1915.

Mr. Editor: I sent around recently to a number of the physicians of Boston a circular, asking for instruments, even of old style, and surgical supplies of any sort, for use on the fields of war and in the army hospitals, especially in Servia, Russia, and Montenegro. I did this in the belief that even limited personal contributions might in the aggregate reach a number. In response to this appeal I have received quite a number of valuable instruments, some of the best of which were amputating sets and pocket cases, while others consisted of obstetrical forceps and instruments for eye, ear, and throat work, all of which, I am assured, are certain to be welcomed.

I am now writing in hopes that some physicians may be reached to whom the circular did not go, especially physicians in other portions of the state. I would add subcu. syringes, if in fair condition, and supplies of morphine or strychnia, heart stimulants, and especially anesthetics are greatly needed; also that if anyone to whose attention this letter may come is acquainted with relatives of physicians who have died, especially former army surgeons, I should be greatly obliged if their attention should be called to this need.

Whatever is sent will be sent promptly, as I understand the vessel is to sail quite soon.

Yours very truly,
James J. Putnam, M.D.

WOMEN PHYSICIANS IN MEDIEVAL TIMES.

Boston, Jan. 6, 1915.

Mr. Editor: The following is from a prose translation of "Erec and Enide" by Chrétien de Troyes, among the best-known of old French poets of medieval times. Chrétien whote in Champagne during the third quarter of the 12th century, 1160-1172. We know, that according to Withington, in the early Middle Ages, the wounded soldier was first looked after by women.

"Guivret escorted Erec to a delightful, airy room in a remote part of the castle. His sisters, at his request, exerted themselves to cure Erec, and Erec placed himself in their hands, for they inspired him with perfect confidence. First, they removed the dead flesh, then applied plaster and lint, devoting to his care all their skill, like women who knew their business well. Again and again they washed his wounds and applied the plaster. Four times or more each day, they made him eat and drink, allowing him, however, no garlic or pepper. . . . But the damsels cheerfully and gladly showed such devotion in caring for him that, by the end of a fortnight, he felt no hurt or pain. Then, to bring his color back, they began to give him baths. There was no need to mistrust the damsels, for they understood the treatment well."

This poem was based on probable occurrences from Chrétien's knowledge of Arthurian legends and, if true, would certainly show a surprising amount of skill and knowledge for the times.

It is not generally known at what a very early date women took their place in organized medicine, for contemporary with the Lombard, Gariopontus, 1050, we find the famous woman physician, Trotula, who occupied the chair of Gynecology at Salerno at this time.

Very truly yours,
Wm. Pearce Coues, M.D.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FROM DEC. 5, 1914, TO JAN. 9, 1915.

December 7, Surgeon J. S. Taylor, detached, *Illinois* to *Nebraska*.

December 8, P. A. Surgeon H. F. Lawrence, temporary duty, Newport Hospital.

December 9, P. A. Surgeon G. E. Thomas, detached, Naval Prison, to Navy Yard, Portsmouth, N. H.

December 12, Asst. Surgeon L. H. Roddis, detached, Marine Advance Base Expedition, Pacific Fleet, to Asiatic Station, via Transport sailing January, 1915.

December 14, P. A. Surgeon K. C. Melhorn, detached Advance Base Expedition, Pacific Fleet, Marines Mare Island, Cal.

P. A. Surgeon R. I. Longabaugh, detached, Third Regiment Marine, San Diego, Cal., to Regimental Headquarters, San Diego, Cal.

Asst. Surgeon L. Leherfed, detached, Marin Advance Base Expedition, Pacific Fleet, to Regimental Headquarters, San Diego, Cal.

P. A. Surgeon W. A. Angwin, to *Monterey*.

Asst. Surgeon P. B. Ledbetter, detached, *Pompey* to Olongapo Station.

Asst. Surgeon W. H. Massey, detached, Olongapo Station, to *Pompey*.

Asst. Surgeon C. S. Stephenson, to Naval Station, Cavite, P. I.

December 15, P. A. Surgeon W. H. Connor, detached, *Dubuque* to *Fulton*.

December 18, P. A. Surgeon E. W. Phillips, to Naval Hospital, Las Animas.

December 18, P. A. Surgeon E. V. Valz, detached, *Minnesota* to home.

P. A. Surgeon J. B. Pollard, to *Minnesota*.

December 22, Medical Director L. L. Von Wedekind, detached, *Solace* to home wait orders.

December 23, Medical Inspector R. M. Kennedy, detached, Naval Dispensary, Washington, D. C., to command *Solace*.

Medical Inspector C. H. T. Lowndes, detached, Marine Barracks, Washington, D. C., to Naval Dispensary, Washington, D. C.

P. A. Surgeon J. Stepp, detached, Naval Dispensary, Washington, D. C., to Marine Barracks, Washington, D. C.

P. A. Surgeon D. G. Allen, detached, Fifth Regiment Marines to *New Hampshire*.

P. A. Surgeon H. Shaw, to Navy Yard, New York.

P. A. Surgeon L. Sheldon, detached, Naval Medical School, Washington, D. C., to Naval Dispensary, Washington, D. C.

P. A. Surgeon M. E. Rose, detached, Fifth Regiment Marines to Navy Yard, Charleston, S. C

December 24, P. A. Surgeon E. A. Vickery, detached, Fifth Regiment Marines to Asiatic Station.

December 29, Surgeon W. Seaman, detached, Bureau of Medicine and Surgery, Navy Department to home and wait orders.

December 31, P. A. Surgeon W. A. Angwin, detached, *Monterey* to Naval Station, Cavite, P. I.

P. A. Surgeon Heber Butts, detached, *Wilmington* to *Monterey*.

P. A. Surgeon E. W. Phillips, detached, Naval Hospital, Philadelphia, Pa., to treatment, Naval Hospital, Las Animas, Colorado.

January 5, Surgeon W. Seaman, to Naval Station, Honolulu, T. H.

◆

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the Relief of the Belgian Profession for the week ending January 9, 1915.

Contributions:

E. G. M.	$ 10.00
L. M. W.	5.00
A. T.	10.00
J. G. R. M.	25.00
J. C. T.	25.00
L. C. F.	10.15
E. T. F.	10.15
F. W. S.	10.00
G. L. H.	25.00
G. E. L.	5.00
E. E. K.	10.00
A. M. C. O.	100.00
D. S. M.	10.00
C. M. B.	1.00
M. C. M. S.	25.00
H. M. S.	10.00
E. H. M.	5.00
Total	$296.30
Disbursements	None
Contributions previously reported	$662.50
Grand total	$958.80

F. F. SIMPSON, M.D., *Treasurer.*

◆

APPOINTMENTS.

Dr. Simon R. Klein, professor of histology and embryology at Fordham University Medical School, has been appointed pathologist of the Norwich State Hospital for the Insane.

Dr. Louis Schapiro, of Milwaukee, Wis., has been appointed a member of the International Health Commission of the Rockefeller Foundation, to work in Costa Rica and northern Egypt.

NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the Society will be held in Sprague Hall, Medical Library Building, on Monday, January 25, 1915, at 8.15 P.M.

MEMORIAL ADDRESSES.

"Dr. Charles Sedgwick Minot," Dr. Richard Clark Cabot.

"Dr. James Gregory Mumford," Dr. William Townsend Porter.

The annual business meeting will be held at 9 P.M. Members of the Suffolk District Medical Society are cordially invited to attend.

E. W. TAYLOR, M.D., *President.*
R. M. GREEN, M.D., *Secretary.*

◆

SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY.—The thirty-fifth meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, January 29, 1915, at 8.15 P.M.

The following papers will be read:

1. "Acidosis in Children," Arthur A. Howard, M.D., Boston.
2. "Parenteral Immunization in Conditions of Proteid Sensitization," J. L. Goodale, M.D., Boston.
3. "Weaning—Its Relation to Anaphylaxis as Shown by Differential Blood Counts," H. C. Berger, M.D., Boston.

Light refreshments will be served after the meeting.

E. M. BUCKINGHAM, M.D., *Pres.*
R. M. SMITH. M.D., *Sec'y.*

THE NEW ENGLAND HOSPITAL MEDICAL SOCIETY.—The New England Hospital Medical Society will hold its annual meeting at Boston University, 688 Boylston Street, Boston, Thursday, January 21, 1915.

Business meeting at 7.30. Election of officers.

Lecture at 8 P.M., by Sarah E. Palmer on "Cathedrals of Southern England and of Northern France. Development of Gothic Architecture." Illustrated by original slides.

The annual banquet was dispensed with this year because of the money given by the Society to aid the relief of war refugees in Europe.

ANNA O'SULLIVAN, *Secretary.*

◆

RECENT DEATHS.

DR. FRANKLIN M. COUCH, who died on January 10 at Dalton, Mass., was born in East Lee, Mass., in 1862. After graduating from Amherst College, he received the degree of M.D. from the New York Homeopathic Medical School in 1880. He had practised his profession at Dalton since 1885. He is survived by his widow and by one son.

DR. WILLIAM E. WALKER, of West Charleston, Me., died on January 1, 1915.

DR. LÉON VAILLANT, Professor in the Faculty of Sciences at Montpellier, has recently died at Paris.

DR. NATHANIEL MORTON RANSOM, a Fellow of The Massachusetts Medical Society since 1863, died of arteriosclerosis at his home in Somerville, Mass., January 8, aged 84 years. He was born in North Carver, Mass., on March 8, 1830. He was graduated from the Berkshire Medical College in 1861; lived first in Taunton, Mass., and for twenty-five years in Somerville. He was an ordained minister of the Advent church as well as a physician.

A BIT OF

STIMULA

THE SIZE OF A PEA

rubbed over the aching nerve-ends of Rheumatism or Neuralgia, will quickly **relieve the symptoms** while you **treat the cause.**

Try it yourself

We will gladly send you a sample if you will simply write STIMULA on the back of a post card, with your name and address, and mail at once to

THE E. L. PATCH CO.
99 NORTH STREET, BOSTON, MASS.

INDEX TO ADVETISEMENTS

Attleboro Home Sanitarium.................. 11
Benger's Food.................................. 8
Douglas Sanatorium...........Dorchester, Mass. 11
Fisk & Arnold.................Artificial Limbs 15
Fisk Hospital.................Brookline, Mass. 13
For Sale.. 6
French Lick Springs...............Pluto Water 14
Harvard Dental School.......................... 10
Harvard Medical School......................... 10
Highland Spring Sanatorium......Nashua, N. H. 11
Jefferson Medical College of Philadelphia........ 11
King's Puremalt Department.................. 15
Knoll & Co.. 9
Macullar Parker Co..................Clothing 7
Mahady, E. F. Co................................ 14
McKesson & Robbins............................. 2
Medical School of Maine..........Bowdoin College 10
Medical Echo..................................... 6
Medico-Chirurgical College of Philadelphia...... 11
Mellin's Food Co................................. 8
Millet Tuberculosis Sanatorium.................. 13
New York Polyclinic Medical School.............. 10
New York University........Medical Department 11
Notices.. 6
Nurses' Directory............................... 13
"On-the-Hill" Sanitarium.....Watertown, Conn. 11
Parke, Davis & Co...................Chemists 5
Patch, E. L. Co................................. 15
Pomeroy Company................................ 14
Professional Cards.............................. 12
Radium Chemical Co.............................. 5
Saunders, W. B. Co.....................Books 1
Schering & Glatz................................ 2
Sharp & Dohme.......................Chemists 16
Sherman's Bacterins............................. 14
S. P. Charges Co................................ 14
Storm, Katherine L., M.D........................ 16
Sundelius, Gustaf....................Masseur 13
Syracuse University.........College of Medicine 10
Tufts College Medical School.................... 10
Wanted... 6
Warren Chambers.................................. 6
West Newton Home School........................ 11
Westport Sanitarium............................. 11
Whiting & Sons, D................................ 8

Fisk & Arnold
Established 1865
Oldest Manufacturers in New England of
ARTIFICIAL LIMBS

For Every Amputation.

United States Government Bonded Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates an arm for amputation above elbow with spring thumb, detachable hand and elbow locking device.

Full descriptive catalogue on application.

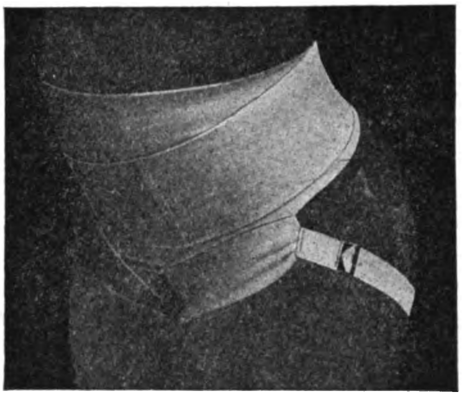
3 Boylston Place, Boston, Mass.
Telephone, Oxford 3684-M.

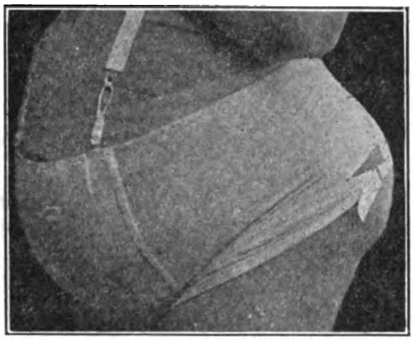
THE STORM BINDER AND ABDOMINAL SUPPORTER

(PATENTED)

Modifications for Hernia, Relaxed Sacro-iliac Articulations, Floating Kidney, High Operations, Ptosis, Obesity, Pregnancy, etc.

Adapted to Use of Men, Women and Children





Weight—418 lbs. With a Storm Binder Obesity Belt.

No whalebones, no rubber elastic—washable as underwear. Suitable for non-operative and post-operative cases. Comfortable for sofa and bed wear and athletic exercises. A practical relief for visceroptosis.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours.

KATHERINE L. STORM, M. D.

1541 Diamond Street, Philadelphia

F. H. THOMAS CO., 689-691 Boylston Street, Agents for Boston and Environs

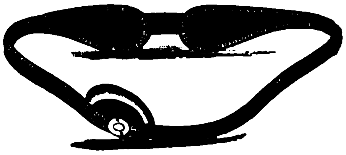
POMEROY FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY

41 WEST STREET, BOSTON



Jamaica Printing Company, Jamaica Plain, Boston, Mass.

THE BOSTON Medical and Surgical JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 4

THURSDAY, JANUARY 28, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ADDRESS
SCHOLARSHIP IN MEDICINE. *By Theobald Smith, M.D.*, Boston.

ORIGINAL ARTICLES
A STUDY OF NORMAL-LOOKING BRAINS IN PSYCHOPATHIC SUBJECTS. *By E. E. Southard, M.D., and M. M. Canavan, M.D.*, Boston.
THE EMERGENCIES OF EXTRA-UTERINE PREGNANCY AT THE BOSTON CITY HOSPITAL. *By E. B. Young, M.D., Boston.*

CLINICAL DEPARTMENT
LYMPHATIC LEUKAEMIA IN ACUTE INFECTION, AFTER REMOVAL OF THE SPLEEN. *By J. M. Jackson, M.D., and W. D. Smith, M.D.*, Boston.
SUB-MUCOUS RESECTION AS A MEANS OF OBLITERATING SUPERFICIAL BLOOD VESSELS. *By Joseph Prenn, M.D.*, Boston.

MEDICAL PROGRESS
PROGRESS IN TUBERCULOSIS. *By John B. Hawes, 2d, M.D., and P. C. Bartlett, M.D.*, Boston.

EDITORIALS BIOLOGIC ASPECTS OF EARLY MARRIAGE. NEW YORK'S NEW SANITARY CODE. TREATMENT OF RUPTURED TUBAL PREGNANCY. ADMISSION TO RUTLAND STATE SANATORIUM. CONTAMINATION OF FOOD WITH FECAL MATTER.

For complete table of contents, see first text page.

JUST ISSUED—NEW (2d) EDITION

Mumford's Surgery—for the Practitioner

Dr. Mumford's work is, in the strictest sense, a *clinical surgery*—a surgery for the general practitioner. Why? First, because *minor surgery* is given a great deal of attention—275 pages—taking up the diagnosis and treatment of such conditions as felon, boils, carbuncles, palmar abscess, infected hangnail, ingrowing nails, sprains, burns, frost-bite, keloids—all those minor conditions you—the general practitioner—must treat in your own office.

Then, the *arrangement* of Dr. Mumford's work is different: It takes up diseases in their order of importance to you, emphasizing and giving preference to those you meet most frequently in your daily work. Appendicitis, for instance, concerns you far more than does inflammation of Meckel's diverticulum; meningitis, more than cirsoid aneurysm; and felon, more than Dupuytren's contraction.

In Mumford's surgery you get no theory, no principles, nothing but practical, clinical facts—*bedside surgery*—concrete methods of diagnosis, of treatment, methods tried and proved over and over by Dr. Mumford himself in the clinic, the operating-room, at the bedside—methods you, the general man, can use—*will use*—in your everyday practice.

Octavo of 1082 pages, with 682 illustrations. By JAMES G. MUMFORD, M.D., formerly Lecturer on Surgery, Harvard Medical School. Cloth, $7.00 net; Half Morocco, $8.50 net.

W. B. SAUNDERS COMPANY **West Washington Square, Philadelphia**

Entered at the Post-office at Boston as second-class matter

Physicians appreciate what our steam-cooking does for H-O.

1. It breaks down the walls of the starch cells.
2. Our cookers being sealed, the full flavor of the oats is retained.
3. The high heat sterilizes the oats.
4. It makes possible the thorough cooking of H-O in only 20 minutes.

H-O is steam-cooked for over 2 hours at the mill!

H-O

THE *ONLY* STEAM-COOKED

Oatmeal

The H-O Company, Buffalo, N.Y.
Makers of H-O, Force, *and* Presto.

THE DUCTLESS GLANDS

We are able to supply limited quantities of those mentioned below, *with full assurance of their identity and quality.* Their field of usefulness has not been well defined, and the evidence so far available is mainly suggestive. In view of these facts, we supply the material without recommendation.

PARATHYROIDS (DESICCATED).

Tablets, each equivalent to 3/5 grain of the fresh gland.

Employed in such diseases as paralysis agitans, chorea, epilepsy and tetany.

PINEAL GLAND (DESICCATED).

Tablets, each equivalent to 1/2 grain of the fresh gland.

Suggested for use in treating mentally defective children, particularly in cases where there is no physical defect. Of possible value in mongolism.

ANTERIOR LOBE OF THE PITUITARY BODY (DESICCATED).

Tablets, each containing 2 1/2 grains of the desiccated tissue.

Of possible value in peculiar disturbances of metabolism, delayed development (both mental and physical), and certain derangements of the genito-urinary system.

LITERATURE SUPPLIED ON REQUEST.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.

JAN 28 1915

The Boston Medical and Surgical Journal

Table of Contents

January 28, 1915

ADDRESS.

Scholarship in Medicine. *By Theobald Smith, M.D., LL.D.*, Boston ... 121

ORIGINAL ARTICLES.

A Study of Normal Looking Brains in Psychopathic Subjects. *By E. E. Southard, M.D., and M. M. Canavan, M.D.*, Boston ... 124
The Emergencies of Extra-Uterine Pregnancy at the Boston City Hospital. An Analysis of Sixty-Two Cases. *By Ernest Boyen Young, M.D.*, Boston ... 131

CLINICAL DEPARTMENT.

Lymphatic Leukaemia in Acute Infection, after Removal of the Spleen. *By James Marsh Jackson, M.D., and William David Smith, M.D.*, Boston ... 136
Sub-Mucous Resection as a Means of Obliterating Superficial Blood-Vessels. *By Joseph Prenn, M.D.*, Boston 138

MEDICAL PROGRESS.

Progress in Tuberculosis. *By John B. Hawes, 2d, M.D., and P. Challis Bartlett, M.D.*, Boston ... 138

SOCIETY REPORTS.

The Philadelphia County Medical Society. Meeting of November 25, 1914 ... 142

BOOK REVIEWS.

Practical Therapeutics. By Daniel M. Hoyt, M.D. ... 145
Diseases of the Skin, Including the Acute Eruptive Fevers. By Frank Crozer Knowles, M.D ... 145
A Text-Book of Pathology. By Francis Delafield, M.D., and T. Mitchell Prudden, M.D. ... 145

EDITORIALS.

Biologic Aspects of Early Marriage ... 146
The Treatment of Ruptured Tubal Pregnancy ... 147
New York's New Sanitary Code ... 148
Admission to the Rutland State Sanatorium ... 149
Contamination of Food with Fecal Matter ... 150
Medical Notes ...151
Current Literature ... 154

MASSACHUSETTS MEDICAL SOCIETY.

Franklin District Medical Society ... 158

OBITUARY.

Dudley P. Allen. M.D ... 157

CORRESPONDENCE.

Early Pictures of Acromegaly. *William Pearce Coues, M.D.* 159
Belgian Physicians' Relief Fund. *Howard C. Taylor, M.D., F. F. Simpson, M.D* ... 159

MISCELLANY.

Contamination of Lake Waters ... 157
School for Health Officers ... 158
The Cutter Lectures ... 160
Notices, Appointments, Resignations, Recent Deaths, Books and Pamphlets Received ... 160

Address

SCHOLARSHIP IN MEDICINE.[*]

By Theobald Smith, M.D., LL.D., Boston.

We have come together this afternoon at the close of the day's work to show our appreciation for scholarship and renew our allegiance to the ideals for which it stands. The John Harvard Fellowship represents a kind of honorary degree of limited duration. We assume that the reasons for conferring this distinction will endure throughout the life of the recipient. In other words, we believe that the John Harvard Fellows are to become, in due time, ripe scholars.

Although no two of us may agree upon all the attributes of the genuine scholar of the present day, yet all of us, I am certain, look upon him as devoted to the intellectual life. He does not need to be a hustler, or organizer, or contractor of intellectual labor. The rule of business, not to do anything that some one else can be delegated to do, is not a safe maxim for him. His work, like that of the artist, bears the stamp of his personality. It becomes vitalized and it grows in his hands. It can never be too good for improvement.

The true scholar is probably not aware that he is exercising any leadership, for he is not a conscious leader. He is not the self-constituted head of a so-called school, for that suggests a too close adhesion to unproved doctrines, and is not infrequently exploited for personal and national aggrandizement. He is content with placing his work on record and leaving it to its fate. The true scholar is not a partisan or advocate because the two or more sides presented by every question for due consideration are quickly detected by his periscopic vision, and he may see little to choose between them. He may at times become partisan to restore an upset equilibrium between contesting sides so that the actual facts may come into better view.

A mere display of absorbed knowledge does not make a scholar. He is not a passive creature. He is continually active in remaking old and creating new knowledge. There is a dynamic element in his make-up. Inactive erudition, often the badge of what has been called culture, is thrown off by him, as ballast is from a rising airship. Too much emphasis has been placed by educators upon the statement so often made, that a university should not teach anything that is useful, for it is apt to be misunderstood. The university teaches things not because they are not useful, but because like Emerson's weeds, their utility has not yet been discovered. The modern scholar, the product of the University, I would then define as one whose motto is the promotion of human welfare. He who in a purely scientific spirit and with the tools of pure science goes forth to struggle for the betterment of his fellowmen, is facing towards true scholarship. This definition will include the scientific worker in medicine. He has been brought into the company of scholars, and he is there to stay.

The young striving student of today may be somewhat discouraged at the seeming indifference and even disdain, manifested by many of his colleagues towards intellectual work. I venture to suggest several causes at work. The doors of our higher educational institutions are thrown open too wide and the competition between the intellectually fit and unfit has not been severe enough. Our indifferent and unfit students are like square pegs in round holes. They belong elsewhere. Access to educational privileges of the highest order is a very valuable consideration. It is being bestowed without insisting on a due return to society, which largely pays the bills. This cannot but degrade the privilege sooner or later. Another reason may be that human society has been surfeited with the achievements of the mind. We have been living in an age of wonders, due to patient research. Why should not the average man's appreciation become blunted for the time being? The worship of physical force, which has eclipsed scholarly tastes and which breaks forth with equal energy on the field of sport and the field of battle, may be due to the very creatures of intellectual labor, the huge machines of industry which replace the physical labor of giants.

---

[*] Address to the Students of the Harvard Medical School on the Occasion of the Presentation of the John Harvard Fellowships, Dec. 2, 1914.

The quiet, unobtrusive character of the thought which must precede all actual achievement conceals the real motive force behind the world's development. It is almost never the scholar who presses the button in order to let the accumulated energy which his researches have brought together, burst forth and perform their marvellous feats before spell-bound multitudes. He and his kind remain in the background and they usually prefer to remain there.

Bagehot, the English economist, quotes Pascal as saying that most of the evils of life arose from "man's being unable to sit still in a room," and he himself deserves quoting on this matter. "If it had not been for quiet people who sat still and studied the sections of the cone, if other quiet people had not sat still and studied the theory of infinitesimals, or other quiet people had not sat still and worked out the doctrine of chances, the most 'dreamy moonshine,' as the purely practical mind would consider, of all human pursuits; if 'idle stargazers' had not watched long and carefully the motions of the heavenly bodies, our modern astronomy would have been impossible, and without our astronomy, our ships, our colonies, our seamen, could not have existed." To sit still in a room, to study, and to think, are the necessary antecedents of the scholar. No wonder that scholarship is distasteful to many who are reaching for its fruits. It is an acquired habit, developed by and necessary to civilization. It is the cement that holds together the social structure. Without it society, which is now completely dependent on material welfare, would fall to pieces.

These and other reasons might be given for the not enviable position of intellectual work and the gross misconception of its true value among the youth of our country today. It was probably always so and will continue to be so.

Perhaps there is one function of the scholar which should be cherished above all others. It is to discover and tell the truth. In spite of our many and increasing agencies for disseminating information, it seems just as difficult as ever, to get at the truth about any given subject. It is not always palatable and has occasioned great disturbances. Many scholars have been compelled to fight and suffer for what they firmly believed to be the truth. Even today the scholar's truth is not always acceptable. He may suffer for revealing it, although in no such spectacular ways as history reports to us. We are just as averse to accepting new truths that do not fit our environment as were the people in earlier centuries.

The young scholar's difficulties are not, as a rule, with inquisitions and adverse criticism, either by his co-workers or the public at large. His chief difficulty is to get a hearing. In the first flush of his discovery of a fact he considers production identical with distribution. But he soon begins to wonder why his new fact travels so slowly. In due time he begins to realize that his discovery, his treatise, is having a struggle, all of its own, to survive among the mass that issues from the laboratory and the clinic. The best may be temporarily eclipsed and this fact should give courage when the first fruits have failed to reach the market. He may console himself with the fate of Mendel's discovery, which lay fallow for nearly fifty years. As time goes on he may find that his productions are not properly valued, some are overestimated, others underestimated, still others wholly disregarded. He should not be disappointed, however, but bear in mind that his work will eventually find its proper level. Its true specific gravity will sooner or later decide its fate.

The scholar's rewards will always be small. The distinguished men who have gone before have not been in the habit of thinking of themselves, and this habit should not be encouraged. In the future ideal state of society when we will be doing our tasks instinctively, when we will say with Luther "I can do nought else, God help me," we shall not be thinking much of ourselves.

But let us return to the John Harvard Fellow in Medicine and speculate a little about his future work. Is it expected of him that he go out of his way and become distinguished for exploits far away from the bedside and the laboratory? Shall he become a prominent literary figure, a historian, or an authority in a non-related science? Undoubtedly, success in these fields will earn for him the name of scholar, but he would not necessarily be a medical scholar. Some have attained the mastery in two distinct subjects, but as a rule one languishes. Today medicine is so inclusive that few may venture into other fields without forfeiting their allegiance to it. I would, therefore, define my ideal of the scholar in medicine as one who makes medical science or biology, which includes medicine, the foundation of all his undertakings.

I take it for granted at the outset that the John Harvard Fellow is going to do some thing well; that he is going to fit himself to be a part of the great engine of medicine which is doing so much work today for human welfare. This is only a fundamental demand upon all of us to find our place in human society and not to become unadaptable fragments, increasing by so much the already formidable human scrap heap. In our profession, to use a well-known quotation, "The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain or dries like raindrops off the stones."

But the scholar in medicine must be more than fundamentally serviceable as a part of a great machine. He must be in touch with all its parts, His horizon must encircle all the activities of medical science. He must be more than aware of the existence of other specialties than his own, and bring to his colleagues sympathy and a strong desire to assist and to accept assistance. The more snugly adjusted and useful he becomes in his own specialty, the more cognizant he must become of the essential importance of other specialties. He must make use of this circumspect knowledge and become constructive. Without master minds, medical specialties are but *disjecta membra,* and medicine a chaos.

After these necessary preliminaries have been satisfied, the real task of the scholar in medicine begins, for the test of scholarly work is that its influence radiate beyond the confines of the special field of his immediate life-work, that it penetrate outward and into human socnety, that it contribute something to the spiritual and social betterment of his fellow men. More than once have I heard it said by men in private and in public, that their hopes for human society were centred in the vital disclosures of biological and medical research. Each scholar must try to find this major problem for himself, and in the choice and the solution his rank will reveal itself. It must be interpretative, illuminative, and not merely executive work. It must give us theories, creeds, and ideals for human behavior and activities. It must build biological facts and theories out over the depths of human superstition, ignorance, and prejudices, so that we may find the place for the next pier on which to rest human activities that aim toward a complete bridging of this chasm. This I interpret to be the true meaning of ripe scholarship.

Is medicine, which I use here as a term inclusive of all biological research, too narrow to carry on this work?

It is now over half a century since Herbert Spencer made an attempt to build up sociology on biological principles. Economists and sociologists have regarded the result as disappointing. I am inclined to suggest to the scholars in medicine of the immediate future. Why not take up Herbert Spencer's work? We need today more than ever, some constructive, generally acceptable theory of social organization and government, of the relation of the individual to the whole; of the relative meaning of environment and heredity, of the significance of nations as great groups of units to one another. Have not these problems been solved for us, not once, but many times in the organization of man and the lower animals? The student of medicine is well equipped, for he is studying one of the greatest achievements of coöperative activity. Is there any state, any commonwealth, which holds within itself such profound information on fundamental principles of organization and administration as does the commonwealth of cells, called the human body? Is there any that has been studied so profoundly? The many totally distinct, but inter-communicating groups of units, the intricate mechanism of adjustment between near and distant parts, the checks and counterchecks that maintain due equilibrium of function and repress undue individualistic growth, the economy of effort, the remarkable utilization of energy and many other phenomena of government are being disclosed. May not the scholar in medicine help in giving us as units of the social organism a due appreciation of the identity of the problems involved in both biological and social evolution?

It is one of his special tasks to show us the significance of the great practical work our profession is doing in preventing disease and saving life. He must show us both sides of this great work,—not only its humanitarian aspect, but also its one-sidedness, and teach us what is needed to supplement it so that it may be of real and lasting value. Nothing should escape his analysis and criticism of what is going on in the medical world, so that medicine may continually adjust and readjust its own work to changing social conditions. May he not as a student of a subject which is rapidly learning to replace the treatment of symptoms for a study of the underlying causes or necessary conditions, give us without fear or favor the sequences leading to great human catastrophes or diseases of the social organism like the one we are now passing through?

I am led to this suggestion of a more intimate relation between biological and social sciences because great discoveries which give a new direction to currents of thought and research are not, as a rule, gained by the accumulation of vast quantities of figures and statistics. These are apt to stifle and asphyxiate and they usually follow rather than precede discovery. The great discoveries are due to the eruption of genius into a closely related field, and the transfer of the precious knowledge there found to his own domain. It is not so very long ago when medicine paid but little attention and less respect to the unusually rich field of animal life as a source of information. Today, every department of medicine fills its available working spaces with animals which are the subject of profound study. The results have revolutionized human medicine within a generation.

I have a firm conviction that the laws governing life are the same whether applied to ourselves as great biological organizations or our still greater social organism. My only fear is that we do not yet know enough of these laws to become trusted advisers in social evolution and regeneration. The task is, therefore, great enough to occupy many a John Harvard Fellow of the future, if he be inclined to assume it. With it before him, he would not be tempted to live a life of double dilentanteism, but a single purposeful existence, because his two-fold task would be really one.

◆

Original Articles.

A STUDY OF NORMAL-LOOKING BRAINS IN PSYCHOPATHIC SUBJECTS.

Third Note (Boston State Hospital Material).*

By E. E. Southard, M.D., Boston,

Pathologist to State Board of Insanity, Massachusetts; Director of Psychopathic Hospital, Boston; and Bullard Professor of Neuropathology, Harvard Medical School, Boston,

and

M. M. Canavan, M.D., Boston.

Assistant Pathologist, State Board of Insanity, Massachusetts (formerly Pathologist to Boston State Hospital.)

Following is a third fragment of the study now in progress of the brain side of the so-called functional psychoses. Functional psychoses ought to be such that the brains would show nothing that should not be there, nothing not quite "physiological," nothing not essentially reversible and capable of return to the *status quo*. In order to study functional psychoses, we, strictly speaking, need to find cases without intrinsic brain changes. In the midst of the host of intrinsic and extrinsic changes which a majority of brains in psychopathic subjects shows, it has proved difficult to secure an irreproachable functional series. The more exact and finical the brain examination, the harder is it to secure "normal-looking" brains, although the "changes" and "anomalies" found may have had nothing to do with the particular psychopathy of the given case.

The percentages of normal-looking brains in the series so far studied are as follows and may be considered as roughly true in consideration of the anatomical criteria prevalent in the different laboratories.

Worcester[1]	249	741
Taunton[2]	70	450
Danvers[3]	235	1000
Westborough[4]	73	500
	627	2691

To these percentages may be added that of the Monson State Hospital (for epileptics).

Monson[5]	76	205

We wish to communicate the results of an examination of 153 brains at the Boston State Hospital, in which there was, if you please, an intentional bias—a bias towards the Danvers standards of counting all suspicious findings among "abormalities." We need not repeat that we do not suppose that all the abnormalities found in the majority of this or any other series are directly correlatable with the psychopathic status of the subjects which carried the brains. What we are investigating is the normal-looking residuum.

Among these 153 were found 20 brains of a normal appearance, *i.e.* brains showing no destructive lesions, atrophic, cystic, or otherwise, and no sclerosis (in the sense of tissue induration or gliosis, regarded as of pathological nature). Some cases of basal or other arteriosclerosis and some of chronic meningeal change were counted as normal-looking, because upon careful search no sign of *substantial* brain change could be found.

Adhering in general to Kraepelinian lines in diagnosis, we find these 20 distributed as follows:—

Endogenous deteriorations (dementia precox)	2*	(xix, xx)
Manic-depressive group (3 involution cases included)	6	(xiii-xviii)
Senile and allied organic psychoses	4	(vii-x)
General paresis	1	(i)
Symptomatic psychoses	2†	(xi, xii)
Epileptic psychosis	1	(v)
Alcoholic psychoses	2	(iii, iv)
Central neuritis	1	(ii)
Syringomyelia	1	(vi)
	20	

Dementia precox forms (10 cases) almost 7% of the *total* B. S. H. series (153 cases); it forms 10% of the *normal-looking* series. One brain in five dementia precox brains is normal-looking.

Manic-depressive psychoses (involutional cases included) form (12 cases) about 8% of the *total* series; they form 30% of the *normal-looking* series.

Senile psychoses (with some allied forms) form about 29% of the total series; they form 20% of the normal-looking series.

---

* Being Contributions of the State Board of Insanity, Number 35 (1915.1). The communication was read in abstract at the meeting of the Norfolk District Society in April, 1914. (*Bibliographical Note.*—The previous contribution was by Dr. A. W. Stearns (1914.14), entitled "Out-Patient Work in Massachusetts State Hospitals for the Insane," Boston Med. and Surg. Jour., Vol. clxxi, November 5, 1914.)

* Possibly 3, owing to the possible inclusion of xii.

† Possibly 1, if xii be transferred to dementia precox.

In order to secure, if possible, a *microscopically* normal set of cases—cases not merely normal-looking in the gross, but normal-looking with the microscope—some orienting studies have been made with the microscope. These studies have permitted already the solution of some problems.

I. *Normal-looking brain in general paresis* (*five months' duration of symptoms*). Microscopically characteristic (plasma-cells about cortical vessels, cell-losses, gliosis) in various areas. Summary follows (details, clinical and structural to be presented in another "note" in this series).

B. S. H. 10,891. Path. (1912.55). Male. Age at onset and death, 53.

Duration of mental disease, 4 months, 27 days.

Mental disease, *continuous*.

Diagnosis. Never in doubt (Psychopathic Hospital, Boston State Hospital).

Terminal Illness. Bronchopneumonia.

Trunk — Chronic Changes. Trichina spiralis, pleuritis, pericarditis.

Trunk — Acute Changes. Hemorrhage in mesentery, bronchopenumonia, bronchial lymph nodes.

Body length—172 cm. *Brain weight*—1270 grams (Tigges' formula—1376 grams).

Lymph Nodes. Not notable.

Ductless Glands: Pituitary, edematous; adrenals, one diffusely red; testes, do not thread well.

II. *Normal-looking brain in central neuritis* (*six weeks' duration of symptoms*). Microscopically characteristic (numerous axonal reactions in various areas) but perhaps not a pure case (since the nerve-cell changes were not all of the axonal type and indeed some seemed to show an admixture of cell-lesions). Southard and Hodskins,[6] as well as Gay and Southard,[7] had offered some evidence to show an association between the clinical entity called "central neuritis" and softness of brain. Gay and Southard went so far as to suggest that bacillus coli communis infections of blood or cerebrospinal fluid might be at the basis of the soft brain. Canavan and Southard,[8] in a paper now in press, found in another series that bacillus coli communis failed to be associated with soft brain, but they found other bacteria capable of splitting laboratory media or of abstracting water from such media.

The present case, as the protocol would show, did *not* exhibit a soft brain; but the brain was described as "tense"-feeling and as entirely filling the dura mater, being especially prominent in the central region (brain weight 1350 gms.). The frontal portion of the pia mater was slightly hemorrhagic, and all the spinal root ganglia presented a curious and unusual appearance of hemorrhage.

Culture from the cerebrospinal fluid yielded bacterium capsulatum (capsule bacillus of Pfeiffer), an organism of the aerogenes group. The blood was sterile. Culture from bronchial lymph node yielded micrococcus aureus and micrococcus roseus.

The total course of symptoms in this patient (44 years of age) was 6 weeks. There is certainly a fair question of the diagnosis. Perhaps the root-ganglion hemorrhages acted to produce reflexly the characteristic movements which are more usually found in "central neuritis."

The histological examination of the hemorrhagic root-ganglia shows hemorrhages in spaces of the dura mater adjacent to the ganglia and small hemorrhages in the peridural fatty tissue. There are no evidences of acute inflammation in the dura mater or fatty tissue. Minute vessels within the proximal portion of the dorsal roots show endothelial nuclei of vesicular and slightly swollen appearance, with at one point a moderate number of mononuclear cells of a vesicular appearance in the adventitia. There are no good examples of lymphocytes in the tissue.

If the clinical phenomena are to be at all related to these peripheral changes, it would seem that they must be largely due to mechanical pressure changes, unless we are to interpret the very slight endothelial changes in the small vessels as toxic.

The Marchi sections show fat in cells within the hemorrhage, but do not show evidences of fat in the nerve fibers.

This case evidently deserves more particular study. For completeness' sake we present data as in other cases of this series.

B. S. H. 12,018. Path. 1913.44. Female. Age at onset and death, 44 years.

Duration before admission, 1 month and 14 days.

Hospital Residence. One day.

Diagnosis. (Melancholia (?)—by outside physicians. (Central neuritis, Boston State Hospital.)

Continued mental illness.

Terminal Illness. Acute interstitial nephritis?

Bacteriology. Heart's blood, negative.

Cerebrospinal Fluid. Bacterium capsulatum.

Bronchial Lymph Node. Micrococcus pyogenes aureus and micrococcus roseus.

Trunk—Chronic Changes. Pleuritis (right) sclerosis of coronaries and aortic valve. Fatty liver, fibroma of uterus.

Trunk—Acute Changes. Hypostatic pneumonia, peribronchial lymphnoditis, follicular colitis, interstitial nephritis.

Body Length—152 cm. *Brain Weight*—1350. (Tigges' formula 1216.)

Lymph Nodes. Peribronchials enlarged.

Ductless Glands: Pituitary negative; thyroid small; adrenals thin. Ovaries firm.

III. *Normal-looking brain in Korsakoff's* (*alcoholic*) *psychosis* (*ten weeks' duration of symptoms*). *Erroneously diagnosticated general paresis*. The erroneous diagnosis was at the Psychopathic Hospital, whose officers chose to discount a negative Wassermann serum test and a negative cytological examination of the liquor cerebrospinalis, and trusted to certain suggestive mental symptoms and reflex-disorders. Upon transfer to the Main Hospital, the case was diagnosticated Korsakoff's psychosis, on the basis of the following findings: Pupils unequal, reacting to light within narrow limits, and are irregular in outline. Knee jerks, right more lively than left; trouble in locomotion; restlessness; hunger; untidiness; fabrication and miscalling of bystanders.

B. S. H. 11,226. Path. 1913.6. Male. Age at death, 44.
Duration. Two months, 14 days.
No *previous attacks.*
Terminal Illness. Sudden death, choking and vomiting.
Bacteriology.—Heart's blood negative.
Cerebrospinal Fluid. Cladothrix invulnerabilis.
Trunk—Chronic Changes. Fibrous pleuritis, epicarditis, sclerosis coronaries, endocarditis, aortic sclerosis, pulmonary tuberculosis. Horse-shoe kidney.
Trunk—Acute Changes. Ileitis, injection duodenum.
Body Length—168 cm. *Brain Weight*—1450. (Tigges' formula 1344.)
Lymph Nodes. Negative.

IV. *Normal-looking brain* (*over-small?*) *in delirium tremens* (*five weeks' duration of symptoms*) *erroneously diagnosticated general paresis, tabetic form.* Microscopic examination showed numerous acute cell changes, but no evidence of general paresis.

It is probable that this brain, weighing but 1010 grams as against a weight calculated by Tigges' formula (8 x 151) (the body length) of 1208 grams, should be regarded as either hypoplastic or atrophic.

B. S. H. 9,981. Path. (1911.11). Female. Age at death, 35.
Duration of Mental Illness. One month, 4 days. Continuous mental disease.
Diagnosis. Taboparesis (erroneous).
Bacteriology. Heart's blood, streptococci. Cerebrospinal fluid, negative. Right middle ear, bacterium aerogenes group. Mesenteric lymph node, negative.
Trunk—Chronic Changes. Decubitus. Splanchnoptosis, ascites, cystic oöphoritis, epicarditis, hypertrophy of heart. Healed pulmonary tuberculosis, chronic interstitial nephritis, chronic ileitis, uterine growth.
Trunk—Acute Changes. Hemorrhagic-oöphoritis, acute diffuse nephritis, injection lower lobes of lungs.
Lymph Nodes. Mesenteric enlarged.
Ductless Glands. Pituitary negative. Thyroid very small. Ovaries—one cystic, one hemorrhagic, adrenals normal.
Body Length—151 cm. *Brain Weight*—1010 grs. (Tigges' formula 1208.)

V. *Normal-looking brain in epileptic psychosis.* (Epilepsy since infancy, dementia from 18+, death at 38.) Microscopically, numerous cell losses,—not here further considered.

B. S. H. 4810. Path. (1911.26). Male.
Diagnosis. Epilepsy.
Terminal Illness. Bronchopneumonia.
Trunk—Chronic Changes. Emaciation, hypertrophy of heart, decubitus.
Trunk—Acute Changes. Bronchopneumonia, congestion kidneys.
Lymph Nodes. In left groin enlarged.
Ductless Glands. Pituitary, thyroid, adrenals negative, testes negative.
Body Length—150 cm. *Brain Weight*—1460 grs. (Tigges' formula 1200)

VI. *Normal-looking brain in a syringomyelic subject with mental symptoms.* (Special study to be published shortly by Dr. H. I. Gosline.)

B. S. H. 9445. Path. (1911.31). Male. Age at onset of mental symptoms, 39 years. Age at death, 43 years.
Duration of Mental Disease. 42 months, 27 days. Mental disease uninterrupted.
Diagnosis. Organic dementia or general paresis.
Terminal Illness. Acute vegetative endocarditis.
Trunk—Chronic Changes. Decubitus, pericarditis, endocarditis, aortitis, fatty hepatitis.
Trunk—Acute Changes. Acute vegetative endocarditis.
Body Length—162 cm. *Brain Weight*—1355 grs. (Tigges' formula 1296 grs.)
Lymph Nodes. Not enlarged (bronchial).
Ductless Glands. Pituitary, thyroid, adrenals, negative. Testes negative.

VII-X. *Four normal-looking brains in Senile Psychoses.* The microscopic examination of all four, so far as completed, exhibits obvious cell-losses, although three of the brains are considerably overweight, and two of them markedly so.

B. S. H. 9314. Path. (1911.32). Female. Age at onset, 64. Age at death, 66.
Duration. 25 months, 10 days.
Continuous mental disease.
Diagnosis. Senile dementia, senile psychosis (presbyophrenic type).
Terminal Disease. Chronic interstitial nephritis, cardiac hypertrophy and general anasarca.
Bacteriology. Heart—micrococcus xanthogenicus, micrococcus varians, micrococcus rubescens. C.S.F.—micrococcus xanthogenicus, micrococcus luteus, micrococcus rubescens, micrococcus simplex.
Retroperitoneal Lymph Node. Micrococcus pyogenes aureus.
Trunk—Chronic Changes. Slight emaciation, ascites, periappendicitis, hydropericardium, myocarditis, endocarditis, apical tuberculosis (healed), pleuritis, nephritis, perihepatitis, gall stones, passive congestion liver.
Trunk—Acute Changes. Absent.
Lymph Nodes. No change.
Ductless Glands. Pituitary, thyroid, negative; adrenals negative, ovaries cystic.
Body Length—164 cm. *Brain Weight*—1340 grs. (Tigges' formula 1312).

B. S. H. 10.500. Path. (1912.37). Female. Age 71.
Duration of Mental Disease. Seven months, 19 days. Mental disease continuous.
Diagnosis. Senile psychosis.
Terminal Illness. Bronchopneumonia.
Trunk—Chronic Changes. Emaciation, adhesive pleuritis, bronchiectasis, brown atrophy of heart, chronic interstitial nephritis, myoma of uterus, hepatic atrophy, splenic atrophy, arteriosclerosis.

Trunk—Acute Changes. Streptococcus septicemia.

Ductless Glands. Adrenals large.

Body Length—153 cm. *Brain Weight*—1380 grs. (Tigges' formula 1224 grams.)

B. S. H. 10,192. Path. (1913.16) Male. Age at onset, 75. Age at death, 77.

Duration. 21 months, 21 days.

Diagnosis. (Senile psychosis with delusions and deterioration.) (Cerebral arteriosclerosis.)

Terminal Disease. Gangrene of lung and arteriosclerosis.

Bacteriology. Heart's blood micrococcus tenacatus. Cerebrospinal fluid, bacillus formosus.

Trunk—Chronic Changes. Elephantiasis? decubitus, ascites; sclerosis mammary, coronary arteries; thrombosis mesenteric veins; pleuritis, aortitis, healed pulmonary tuberculosis, renal lithiasis, hepatic cysts, hypertrophy of prostate, lipoma.

Trunk—Acute Changes. Fibrinous pleuritis, gangrene of lung, hemorrhages in spleen.

Lymph Nodes. Perioesophageal lymph nodes enlarged. Peribronchial lymph nodes enlarged.

Ductless Glands. Pituitary, adrenals negative.

Body Length—137 cm. *Brain Weight*—1440 grs. (Tigges' formula 1096 grms.)

B. S. H. 10,241. Path (1911.42). Female. Age at onset, 77. Age at death, 80.

Duration—36 months, 22 days.

Continuous mental disease.

Diagnosis. Senile psychosis, simple deterioration.

Trunk—Chronic Changes. Emaciation, edema, decubitus, periappendicitis, perihepatitis, sclerosis majority of vessels. Hypertrophy heart, endocarditis, pulmonary tuberculosis, interstitial nephritis, fibromata of uterus.

Trunk—Acute Changes. Hemorrhagic ascites.

Ductless Glands. Pituitary negative, thyroid small, adrenals plump and large.

Body Length—140 cm. *Brain Weight*—1125 grs. (Tigges' formula 1120 grams.)

XI. *Normal-looking brain in an exhaustion-psychosis of unknown but brief duration.* Orienting microscopic examination of the two prefrontals, superior parietal and calcarine areas, showed cell losses characteristically in the outer layers, but also to some extent in inner layers. The most marked cell losses appear in prefrontals and left superior parietal area. It seems hard to explain these findings on the basis of a lesion of brief duration unless at times a brief or critically acting agent may kill cells in such wise as to provoke little or no neuroglia reaction.

B. S. H. 10,284. Path. (1912.7). Male, aged 43. Age at onset, 42. In Hospital 2 months, 25 days.

Duration before admission, unknown.

Diagnosis. Exhaustion psychosis.

Terminal Illness. Pulmonary tuberculosis.

Bacteriology. Heart's blood, micrococcus cumulatus. Cerebrospinal fluid, micrococcus ovalis.

Trunk—Chronic Changes. Sacral decubitus, chronic periappendicitis, sclerosis coronaries, hypertrophy heart, interstitial nephritis, atrophy of liver.

Trunk—Acute Changes. Bronchopneumonia.

Ductless Glands. Adrenals fat. Pituitary edematous. Undescended testicle.

Lymph Nodes. Mesenteric lymph nodes prominent.

Body Length—141 cm. *Brain Weight*—1550 grs. (Tigges' formula 1128 grams.)

XII. *A doubtful case of paranoiac nature, complicated by toxic features.* The orienting sections showed only slight and focal cell losses in the cortex, and for the rest only various marked evidences of cell disease without cell destruction.

B. S. H. 10.416. Path. (1912.41). Female. Age at onset, 50? marked at 59. Age at death, 60.

Duration of Mental Disease. 127 months, 27 days. Mental disease continuous.

Diagnosis. Paranoiac condition. (Toxic?)

Terminal Illness. Pulmonary tuberculosis.

Trunk—Chronic Changes. Emaciation, visceral peritonitis, pleuritis, pulmonary tuberculosis, pericarditis, hypertrophy of heart. Tuberculosis of intestine (ulceration) perioöphoritis.

Trunk—Acute Changes. Thrombus, aorta.

Lymph Nodes. Bronchial and mesenteric enlarged.

Ductless Glands. Pituitary, thyroid, negative; adrenals small, ovaries small.

Brain Weight—1130 grams. (Tigges' formula 1184 grams.)

XIII-XV. *Three normal-looking brains in cases of involution-psychoses.* Orienting examination in these cases similar to XI indicated that XIII was probably a case of brain atrophy, that XIV was possibly an arteriosclerotic dement, (at any rate microscopic changes in this patient of 84 were rich enough) and that XV was quite beyond question a case of brain atrophy.

B. S. H. 7771, 8933. Path. (1911.5). Female. Age 71. Age of onset, 65; age at death, 73.

First Attack. Duration (onset 65), 24 months, 12 days.

Second Attack. Duration (onset 70), 31 months, 11 days.

Diagnosis. Chronic melancholia.

Terminal Disease. Facial erysipelas and bronchopneumonia.

Bacteriology. Heart's blood, bacterium gallinarium. Cerebrospinal fluid: Micrococcus candicans.

Trunk—Chronic Changes. Emaciation, ascites, splanchnoptosis, periappendicitis, pulmonary tuberculosis, pleuritis, coronary sclerosis, endocarditis, gall stones, interstitial pancreatitis, fibromata oöphoritis.

Trunk—Acute Changes. Hemorrhagic endometritis, bronchopneumonia.

Lymph Nodes. Cervical lymph nodes calcified.

Ductless Glands. Pituitary negative, thyroid—cystic, adrenals, autolysed, ovaries atrophied.

Brain Weight—1130 grams. (Tigges' formula 1240.)

B. S. H. 4798, 5394. Path. (1912.11). Male. (1) Age at onset, first, 67. In hospital Aug. 2, 1895, to Dec. 16, 1895. Discharged improved.

Diagnosis. Acute melancholia.

(2)Age at onset, second, 70. In hospital, 14 yrs.

Diagnosis. Involution melancholia.

Entire duration of mental disease, 168-3/30 mo.

Cause of Death. Acute dilatation of the heart.

Course of Disease. Interrupted at first, latterly continuous.

Bacteriology. Heart's blood. Micrococcus cremoides. Cerebrospinal fluid, negative. Bladder, bacterium gallinarum. Prostate, bacterium gallinarum.

Trunk—Chronic Changes. Perisplenitis, peri- and hepatitis. Sclerosis—mammary, coronaries and aorta. Fatty myocarditis, hepatitis. Dilatation of heart and two incompetent valves, tricuspid and mitral. Chronic interstitial nephritis with cysts.

Acute Changes. Injection gastric and intestinal mucosa, acute cystitis, pus in prostate—acute splenic tumor.

Lymph Nodes. None enlarged.

Ductless Glands. Thyroid, adrenals very small. Testes, pituitary not notable.

Body Length—172 cm. *Brain Weight*—1430 grs. (Tigges' formula, 1346 grams.)

B. S. H. 9924. Path. (1912.29). Female. Age at onset, 58; in hospital 18-14/30 mo.

Entire length of mental disease, 20-14/30 mo.

Diagnosis. Involution melancholia.

Course of Disease. Continuous.

Terminal Illness. Septic endocarditis with multiple septic emboli.

Trunk—Chronic Changes. Chronic pleuritis, hypertrophy of heart, sclerosis aorta, atrophy of spleen, atrophic uterus, splenic infarction.

Trunk—Acute Changes. Slight hemorrhages in gastro-intestinal tract, thrombus in aorta.

Lymph Nodes. Not enlarged.

Ductless Glands. Adrenals, ovaries, pituitary negative. Testes negative.

Body Length—150 cm. *Brain Weight*—1050 grs. (Tigges' formula, 1200 grams.)

XVI-XVIII. *Three normal-looking brains in manic-depressive psychosis.* Orienting examination in these three cases showed in xvi and xviii a moderate degree of cell loss and in xvii numerous cell losses, especially in the upper layers. Possibly xvi and xviii are most nearly normal microscopically of this whole group (with the exception of the dementia precox xx).

B. S. H. 9483. Path. (1911.36). Female. Age at onset, 29 years. Age at death, 31 years.

Duration. One month before admission. Total duration, 19 months, 28 days.

Diagnosis. Manic depressive.

Terminal Disease. Pulmonary tuberculosis and enteritis.

Trunk—Chronic Changes. Emaciation, edema, decubitus, ascites, pleuritis, pericarditis, hydropericardium, heart hypertrophy, sclerosis aorta, anomaly aorta. Pulmonary tuberculosis, intestinal tuberculosis, interstitial nephritis, fatty hepatitis, cystic organ of Rosenmüller.

Trunk—Acute Changes. Absent.

Lymph Nodes. Induration mesenteric lymph nodes.

Ductless Glands. Pituitary plump, adrenals soft, ovaries firm and thin.

Body Length—152 cm. *Brain Weight*—1140 grs. (Tigges' formula, 1216 grams.)

B. S. H. 5,884. 6,791, 7,040, 10,594. Path. (1913.29). Female.

(1) Age at onset, 41; in hospital 2 years. Discharged improved. *Diagnosis.* Acute melancholia.

(2) Age at onset, 43; in hospital 4 months. Discharged improved. *Diagnosis.* Folie circulaire.

(3) Age at onset, 43; in hospital 7 years. Discharged to Medfield. *Diagnosis.* Recurrent mania. Manic depressive insanity. In Medfield two years, discharged to Boston State Hospital.

(4) Fifty-two years. In hospital 13 months. Entire duration mental disease, 162-17/30 mo.

Diagnosis. Manic depressive.

Interrupted at first, latterly continuous.

Terminal Illness. Pulmonary tuberculosis.

Bacteriology. Heart's blood, negative. Cerebrospinal fluid negative.

Trunk—Chronic Changes. Emaciation, atrophy of heart, fatty liver, pulmonary tuberculosis, tuberculosis of intestines, lymphatic hyperplasia.

Trunk—Acute Changes. Absent.

Lymph Nodes. Lymph node hyperplasia appendix and cecal nodes. Ductless glands, adrenals negative, ovaries elongated, white, flat.

Body Length—153 cm. *Brain Weight*—1300 grs. (Tigges' formula 1224).

B. S. H. 11.312. Path. (1913.7). Female.

First Attack. Age at onset 20 (for one year). Recovered, not in a hospital.

Second Attack. Age at onset, 62 (for two years, 14 days). Age at death, 64.

Diagnosis. "Unclassified," Psychopathic Hospital. Manic depressive, depressed; second attack, Main Hospital.

Terminal Illness. Bronchopneumonia. Several days' duration.

Bacteriology. Heart's blood, streptococcus acidi, lactici. Cerebrospinal fluid, bacillus cinctus.

Trunk—Chronic Changes. Corset liver, pleuritis, sclerosis, aorta, coronaries; atrophy of spleen, interstitial nephritis, gall stones, hydropericardium, thickening and swelling right vocal cord, bronchopneumonia, lymphnoditis, vegetative aortitis, pial hemorrhages, aortic thrombus.

Lymph Nodes. Peribronchial enlarged.

Ductless Glands. Adrenals negative, ovaries sclerosed.

Body Length—148 cm. *Brain Weight*—1370 grs. (Tigges formula 1184.)

XIX-XX. *Two normal-looking brains in dementia precox.* Case xix, with a well marked underweight brain showed also an underweight heart and liver but failed to show any marked evidence of cell loss in orienting examination as carried out in the six selected regions as mentioned under xi. Only after considerable search in further section was any evidence of cell loss discovered, namely foci of cell loss in right second temporal gyrus. Naturally it would be unwise to correlate the clinical symptoms of any case with so exiguous a lesion.

Case xx showed moderate degrees of cell loss in practically all the areas examined. As above stated, Case xx and the manic-depressive cases, xvi and xviii are the most free of microscopic alterations of a marked degree in the series.

B. S. H. 8663. Path. (1910.9). Female. Age at onset, 42. Age at death, 56.

Duration of Mental Disease. Fourteen years.

Mental disease interrupted.

Diagnosis. Dementia precox.

Terminal Illness. Osteomyelitis.

Trunk—Chronic Changes. Emaciation, decubitus, edema, ascites, pleuritis, hydropericardium, brown atrophy of heart. Endocarditis, thyroiditis, perisplenitis, gall stones.

Trunk—Acute Changes. Splenitis, nephritis, ileitis.

Lymph Nodes. Retroperitoneal lymph nodes. Superficial lymph nodes enlarged.

Ductless Glands. Ovaries atrophied. Pituitary negative. Thyroid atrophied. Adrenals negative.

Brain weight—1100 grams. (Tigges' formula 1200.)

B. S. H. 10,144. Path. (1912.47). Female. Age at onset, 25; in hospital 27 months, 27 days.

Diagnosis. Dementia precox (catatonia). Entire duration mental disease, 28-3/30 mo.

Continuous mental disease.

Terminal Illness. Pulmonary tuberculosis.

Bacteriology. Heart's blood, bacillus antenniformis. Cerebrospinal fluid, micrococcus citreus and micrococcus concentricus.

Trunk—Chronic Changes. Emaciation, edema, decubitus, tuberculous peritonitis, pulmonary tuberculosis, splenic tuberculosis, hepatic tubercles, oöphoritis and salpingitis, fibroma of uterus, hydrothorax, hydropericardium.

Trunk—Acute. Changes absent.

Lymph Nodes. Mesenteric enlarged.

Ductless Glands. Thyroid, adrenals, ovaries, pituitary negative.

Body Length—148 cm. *Brain Weight*—1210 grs. (Tigges' formula, 1184 grams).

CONCLUSIONS.

1. The present is a fragment from more extensive studies tending to settle the question how far mental disease is consistent with normality of brain; and as in previous work from the Worcester State Hospital, so this work from the Boston State Hospital has chosen to begin with normal-looking brains, since these are more likely to be essentially normal than those brains which yield obvious lesions.

2. On comparison with the Worcester percentage of normal-looking brains, viz., about one in three, and the Danvers percentage, viz., about one in four, the present Boston percentage is much lower, viz., about one in eight.

3. We do not deny that some of the lesions found in the *abnormal* brains may have had little or nothing to do with the mental disease which their bearers showed; the point of our research lodges in the endeavor to discover essentially normal brains in subjects of mental disease. There are 20 in 153 examined by uniform methods which gave promise of being microscopically as well as macroscopically normal.

4. One normal-looking brain yielded a chronic-looking exudate, Case I (12.55) which was a case of general paresis of brief duration (less than five months), clinically certain, showed nerve-cell, and fibre-changes, gliosis and perivascular mononucleosis (including plasma cells) of fairly even degree throughout sections examined. The gross examination yielded opaque points of thickening in the pia mater over the vertex. The dura had begun to thicken and the calvarial diploe had begun to disappear. The brain had not lost more than 100 grams in weight (Tigges' formula).

5. One case yielded evidences of acute perivascular exudate post-pneumonic encephalitis) but the mental picture cannot be regarded as due to the exudate.

6. The suspicion is often uttered that cases not infrequently show fine vascular disease not evident in the gross. No such case has appeared; but there was one (x, 11.42) which, despite coarse changes in the basal vessels, was included in the normal-looking series and microscopically showed slightly marked fine vascular changes with equally marked cortical changes (no infarcts but generalized and focal losses). This case was a female of 80 whose brain weighed 1125 grams, *i. e.* 5 grams above the calculated weight according to body length. It is possible that the brain was slightly edematous—vacuoles among nerve cells (18 hours postmortem, tuberculous peritonitis). The brain was included in the normal-looking series, although on the autopsy table the diagnosis of "general cerebral gliosis" was made (confirmed by the excess of cells in the plexiform layer in virtually every region examined). It may be inquired why a case with basal vascular disease should not be forthwith excluded on the ground that fine changes will be certain to be found; but they are not sure to be found as XIV, 12.11, proved (since in this case there were *gross arterial* changes and *few or no fine* vascular changes).

7. We have accordingly reduced our 20 normal-looking cases to 18 which still give some promise of proving normal on microscopic examination. One of these 18 was a case of epilepsy, v, 11.26, with dementia; and, since the epilepsy began in infancy, it is doubtful whether it should be included in this study. Microscopically in any event, there were numerous evidences of cell-losses.

8. If we exclude this case of epilepsy from the normal-looking numerator of the fraction, we should also possibly exclude 5 other epileptics (or in all 6) from the denominator, yielding a percentage of 11.5 *i.e.* 17 in 147 cases excluding all epileptics and two cases I and X in which the microscope revealed changes which should theoretically yield gross lesions.

9. In a study of the percentage of normal-looking brains, it would be wise also to exclude clear cases of imbecility, of which there were 2 in the series, neither of which yielded a normal-looking brain; this makes a percentage of 11.7% normal-looking brains in a series of 145.

10. In the analysis of this residue of 17 normal-looking brain cases, we must first consider the question of atrophy or aplasia. Eleven cases yielded brain weights above normal, employing Tigges' formula (*i.e.* 8 × body length in cm. = probable brain weight). Six remaining brains weighed less than normal according to this formula. Of these six, one (Case iv, 11.11) yielded a brain weight, 1010 grams, calculated weight 1208 grams, which should probably make this case fall into the atrophic brain group. The reflex picture and certain other clinical features gave rise to the diagnosis *taboparesis*. The total duration was but one month and four days. The absent knee jerks proved due either to axonal anterior horn cell reactions or to peripheral neuritis (abundant Marchi degenerations); and it is probable that we are dealing with a *Korsakoff's psychosis* (history of previous attacks of alcoholic mental disease not obtained, but possible). Abundant evidence of cell-loss with satellitosis was found in many areas microscopically.

Another case (xv, 12.29) yielded a brain weighing 1050 grams, *i.e.* a calculated loss of 150 grams. This case showed various evidences of atrophy in other organs also, and microscopically a remarkably diffuse cell loss in the cortex. Clinically the case was one of involution melancholia, 59 years of age, of 20 months and 14 days.

12. Case xiii, 11.5, with a calculated brain weight loss of 120 grams was a female of 73 years, with total duration of about 8 years. The microscopic evidences of cell loss were such that this case also must probably be placed in the atrophic group; in point of fact her brain atrophy was probably obscured by increase of weight 8½ days post mortem (brain not palpably soft on account of gliosis).

13. xix, 10.9, with a calculated brain weight loss of 100 grams, showed a small heart (145 grams) and a small liver (1000 grams). This case probably does not belong in the atrophic group, since microscopically there was small evidence of cell-loss. This case of paranoid dementia precox will be considered below. xvi, 11.36, and xii, 12.41, with calculated brain weight losses of 76 and 54 grams respectively, can also hardly be classed as showing important degrees of brain atrophy (see below).

14. One case (vii, 11.31) must be excluded from the present analysis, because total brain sections are in process of making (case of syringomyelia).

15. There remains a group of 12 cases, excluding i, xiv, v from the original 19, *i.e.* i as general paretic, xiv as arteriosclerotic dement, v as epileptic, iv, xv and xiii as having atrophic brains, vi as syringomyelia (analysis unfinished). We accordingly remain with one normal-looking brain in twelve.

16. The residue of normal-looking brains, with the above eight omissions, consists of the following twelve:—

Case.	Sex.	Age.	Onset.	Duration.	Diagnosis.
2 (13.44)	F.	44	44	1½ mos.	Central neuritis.
3 (13.6)	M.	44	43	2½ mos.	General paresis? Korsakoff.
8 (12.37)	F.	71	71	8 mos.	Senile psychosis.
9 (13.16)	M.	77	75	22 mos.	Senile psychosis; cerebral arteriosclerosis.
11 (12.7)	M.	43	42	3 mos.	Exhaustion psychosis.
12 (13.41)	F.	60	50	10 2/3 yrs.	Unclassified (paranoia).
14 (12.11)	M.	84	67	14 yrs.	Involution-melancholia.
16 (11.36)	F.	30	29	20 mos.	Manic-depressive psychosis.
17 (13.29)	F.	53	41	13½ yrs.	Manic-depressive psychosis.
18 (13.7)	F.	64	20	2÷1½ yrs.	Unclassified manic depressive.
19 (10.9)	F.	56	42	14 yrs.	Paranoia or dementia precox.
20 (12.47)	F.	27	25	28 yrs.	Dementia precox (catatonia).

17. Attention is first directed to four cases of mental disease over ten years in duration; these are xix, xiv, xii and xvii.

18. This group of cases in which gross registration of lesions might have been expected, was subjected to orienting microscopic examination:—

xix, 10.9, shows strikingly few evidences of cell loss, but careful search discovered foci of cell loss in the right second temporal gyrus. This case, though of slow evolution and diagnosticated paranoia, is thought to have had hallucinations of hearing as well as of sight. The delusions were largely of jealousy and otherwise sexual. One attack of so-called "cerebral congestion" at 40.

xiv, 12.11, involution-melancholia, 84 years at death, exhibited considerable cell loss in outer layers without marked satellitosis. Marked cell loss in calcarine region.

xii. 12.41, unclassified paranoic case, died at 60, showed fairly numerous cell losses.

xvii, 13.29, manic-depressive psychosis, died at

53, showed numerous cell losses, especially in upper layers.

19. According to a principle mentioned in the Worcester analysis, it would be unlikely that induration should register itself in brains undergoing gliosis in less than three months. There were three cases (ii, iii, xi), of which ii was the case of possible central neuritis with marked acute cell changes ample to explain roughly the brief mental disease, iii showed numerous acute cell changes probably quite consistent with the mental picture (Korsakoff's psychosis) and xi showed cell losses, perhaps of long standing (although there were overt symptoms for three months only) together with acute cell changes.

20. The group of intermediate duration, three months to three years, comprises 5 cases, xvi, viii, xx, xviii, ix. Of these, viii, age 71, and ix, age 77, attract attention on the score of age; both showed cell losses, in the former focal with perivascular gliosis, in the latter marked diffuse losses. Of the three remaining, two are manic-depressive cases (xvi, 11.36, and xviii, 13.7) and one (xx) catatonic dementia precox. All three showed moderate degrees of cell loss.

21. Accordingly, it is plain that the search for functional psychoses which shall be above all neuropathological reproach is an exceedingly elusive task and possibly never to be rewarded. In a forthcoming communication we shall deal with the detailed microscopic picture in five of the cases of this series (xii, xvi, xviii, xix, xx) since these five appear to be the least likely of all our series of 153 cases to show important microscopic lesions.

REFERENCE.

[1] Southard: A Series of Normal-looking Brains in Psychopathic Subjects. Worcester State Hospital Contributions, 1912-13, Am. Jour. Insanity, 1913.

[2] McGaffin: A Study of the Forms of Mental Disease in Cases Showing no Gross Lesions in the Brain at Autopsy. Proceedings of American Medico-Psychological Association, May, 1912.

[3] Not yet published.

[4] Southard and Canavan: A Series of Normal-looking Brains in Psychopathic Subjects. Second Note: Westboro Hospital. Jour. Nerv. Ment. Disease, 1914 (in press).

[5] Not yet published.

[6] Southard and Hodskins: Note on Cell-Findings in Soft Brains. Am. Journal of Insanity, October, 1907.

[7] Gay and Southard: The Significance of Bacteria Cultivated from the Human Cadaver: A Study of 100 Cases of Mental Disease, with Blood and Cerebrospinal Fluid Cultures and Clinical and Histological Correlations. Centralblatt f. Bakteriologie, Parasitenkunde u. Infektionskrankheiten, 1910.

[8] Canavan and Southard: The Significance of Bacteria Cultivated from the Human Cadaver: A Second Series of 100 Cases of Mental Disease, with Blood and Cerebrospinal Fluid Cultures and Clinical and Histological Correlations. Jour. of Medical Research (in press).

THE EMERGENCIES OF EXTRA-UTERINE PREGNANCY AT THE BOSTON CITY HOSPITAL. AN ANALYSIS OF SIXTY-TWO CASES.

By Ernest Boyen Young, M.D., Boston,

Instructor in Gynecology, Harvard Medical School;
Junior Visiting Surgeon for Diseases of Women,
Boston City Hospital.

Ever since the paper of Robb[1] appeared in 1908, the writer has been especially interested in the question of immediate or delayed operation in the emergencies arising from ruptured extra-uterine pregnancy.

The views expressed by Robb have caused so much discussion that the writer was led to study the cases treated by the Gynecological service at the Boston City Hospital from 1902 to 1913.

This paper is written after the study of 215 cases diagnosed as extra-uterine pregnancy and treated by the gynecological service since 1902, but deals only with 62 real emergencies which presented the symptoms accompanying ruptured ectopic gestation with severe hemorrhage. These 62 emergencies comprise 31 with a previous history, and symptoms typical of ectopic gestation; and yet in many of these the microscope revealed no sign of pregnancy in the tissues examined.

As they presented, however, such objective symptoms as shock, tubal rupture and severe intra-abdominal hemorrhage, there can be little doubt as to causation. Under any circumstances, the indications as to treatment were identical and hence they have been included. Among these 62 emergencies were 2 coincident extra- and intra-uterine pregnancies, 2 repeated extra-uterine pregnancies, and one twin pregnancy in a single tube.

Analysis of Cases. In 5 the age is unstated. In each of the decades from 20-30 and 30-40 years, the numbers are equal,—28 in each; while after 40 years there is only one. There are none under 20 years.

Obstetric History. Of the whole series, 12 women had never borne children, 14 had previously been pregnant once, 13 twice, 6 three times, 6 four times, 8 had been pregnant five times or over, and in 3 this was not recorded.

The time elapsed since the previous pregnancy among 37 women was: 3 years or under, 16; 3-5 years, 13; and 5-15 years, 9.

Of 46 cases, the previous pregnancy terminated normally in 30, 14 miscarried, and 2 had an ectopic pregnancy.

Duration of pregnancy at the time of rupture in 58 women was: under 2 months in 27, from 2 to 3 months in 26, 3 to 4 months in 4, and 4 months in one.

There were 3 early ruptures: 2 at 2 weeks, and 1 at 3 weeks after the last menstruation.

The last case was interesting, as the tube ruptured near the isthmus, opening the branch of the ovarian arch which runs beneath the tube. The enlargement was about one-half centimeter in diameter, and microscopic examination failed to demonstrate a pregnancy. As there seemed to be no reason to doubt an ectopic gestation in this case, it has been included.

Site of Rupture and Tube Affected. The first was definitely stated in 18: isthmus, 11; central portion, 3; outer end, 4.

The left tube was ruptured in 29, and the right in 27.

There were 3 tubal abortions, all on the left side, and no statement in regard to 3.

Pulse. Of 61 patients, the pulse was 100 or below in 12, and between 70 and 80 in 3. In 27 it was above 120,—170 being the highest rate recorded. The remainder varied from 100 to 120.

Temperature. Of 62 women: 29 had a temperature of 98° or below, 40 a temperature of not over 99, and only 9 rose to over 100°.

Two cases entered with temperatures of 101.2° and 104.2°, respectively.

The Blood Counts. As the bulk of our cases have been operated at night, only 16 have the hemoglobin estimated, and in all these, the sudden onset occurred at least 12 to 24 hours previous to operation. In 3 the percentage was below 40, and in 2 of these so low as to be uncertain by the color test. The remainder were 60% or under, with one exception of 80%.

In looking over these cases we find that the rise of hemoglobin in the blood is a slow process, even after the chance of hemorrhage is past. One patient with 50% hemoglobin at the time of operation had no change by the second day, one with 60% no change on the third and only 5% advance on the eleventh day. Another with 50% on admission had only 60% after 20 days, while one, with hemoglobin too low for estimation, rose only to 45% after 3 weeks. In still another, the hemoglobin gained from 60% to 90% in 19 days, but this is exceptional, and in the first eleven days there was a gain of only 5%.

The red count at entrance, in 4 cases, was between 3 and 4 million, while the patient with extremely low hemoglobin, mentioned above, had 1,164,000 and recovered.

The white count was given in 24 cases and varied from 6400 to 32,000; 10 having a count of 10,000 to 20,000, and 11 of 20,000 or over.

No relation of the white count to either the amount of blood lost or the duration of the rupture could be made out, some of the most severe cases having small leucocytoses.

As showing the rise in reds and hemoglobin, the results are given below in a case recently operated but not included in the series:—

Day after operation	3	6	9
Reds	1,888,000	2,424,000	3,200,000
Hemoglobin	30%	45%	65%

Day after operation	12	24
Reds	3,800,000	3,520,000
Hemoglobin	70%	85%

Symptoms. The symptoms, beside those of ordinary pregnancy, may be broadly divided into two groups: first, premonitory; second those connected with rupture. The first were usually subacute and separated from those connected with rupture, or the acute symptoms, by a definite interval during which symptoms were either wanting or of a mild character. In a few cases the premonitory symptoms were acute, and in some were prolonged into those immediately preceding operation.

In 15 of 60 women, however, there were no disturbing symptoms until the time of rupture. Three of these pregnancies ruptured early: 1 at 6 weeks, and 2 at 5 weeks after the last menstruation, while 2 ruptured at 3 and 3½ months, respectively.

On the other hand, 45 women gave a definite history of suspicious or alarming symptoms for some time previous to the attack for which they entered the ward; if coupled with the acute symptoms which followed and were present on admission.

Premonitory Symptoms were evident in 15 of these from 2 to 7 days before operation, in 27 for from 8 days to 4 weeks, in 2 for 6 weeks, and in 1 for 8 weeks.

These symptoms consisted of:—

(*a*) *Amenorrhea.* Excluding 6 women who ruptured before the following menstrual period was due, this symptom, with others, was common to 39, and appeared in 54 of the 60 cases with histories obtained.

Of 15 women with amenorrhea as the only symptom before rupture: 6 were over 2 months pregnant, and of these, 2 were 3 and 3½ months, respectively, *i.e.* about one-third had simply an amenorrhea.

(*b*) *Abnormal Flowing.* In the 6 early ruptures mentioned in the preceding paragraph, 5 had either an irregular or constant flow, commencing with or shortly after the last regular catamenial period.

In 41 out of the 45 with distinct premonitory symptoms, flowing appeared at various intervals and more often for varying periods before the rupture.

In 20 flow and pain were combined, and 7 flowed without pain.

(*c*) *Abdominal Pain.* This was a complaint in 25 and was localized by 13 in the lower abdomen.

It was described by 16 as intermittent and sharp, and by 9 as dull and persistent.

In several there were attacks at varying intervals, and in 20 it was accompanied by flowing, as stated above.

Acute Symptoms. The records contain statements concerning acute symptoms in 59 cases.

In 8, these had been manifest from 2 days to 3 weeks before entrance; and in the remainder, under 24 hours.

Sudden abdominal pain was characteristic of the great majority, but in 7 this was an increase of existing or a recurrence of similar less acute attacks. In 2 there was simply increasing weakness and pallor after previous intermittent or persistent abdominal pain, for a period of 3 weeks in one and 6 weeks in another.

Pain was apparently unlocalized in 21—2 stating it to be general.

Pain was localized by 16 in the lower abdomen and by 1 in the epigastrium, while by 21 it was definitely referred to the right or left pelvic region—always on the affected side.

Fainting is mentioned in 23 instances, nausea and vomiting in 5, and chills in 3.

A dark bloody flow from the uterus was often noted, but this is more characteristic of tubal abortions, while in some a boggy feeling was present in the vagina, with dullness, shifting dullness, tenderness and distention. The tendencies of temperature and pulse have been previously given.

Mortality. These cases have been treated by many operators and the walk of life from which the patients have been drawn has not been conducive to good operative results, many being extremely poor subjects for any operation on account of personal habits and a poor mode of life.

The total mortality is 24.2%, but 3 died of: cerebral embolus, patent foramen ovale, and infection before admission. With these omitted, the mortality is still 19.3%, but considering the class with which we deal and the condition of many at entrance there seems to be little likelihood of improvement.

Among the 15 women pregnant for the first time, 5 died,—one a tubal abortion.

In 2 of the 5 fatal cases, a chronic salpingitis was reported, and it does not seem improbable that they were infected at the time of rupture from old foci remaining in the pelvis. Three of the 5 died from peritonitis, and 2 from shock alone.

The causes of death in the 15 fatal cases are given below:—

Shock	8
Peritonitis	4
Cerebral embolus	1
Status lymphaticus and patent foramen ovale	1
Infection before admission	1

Summary. In reviewing these cases it is instructive to note that exactly 50% gave positive evidence of pregnancy. This may have been often due to the poor selection of tissue, but more probably to the destruction and washing away of evidence by the rupture and hemorrhage following.

With one exception, blood was distributed throughout the abdominal cavity, and in a number of instances the fetus was found floating in the blood.

Age had apparently no influence, as the cases were scattered through the child-bearing period, in such a manner as would be expected under normal conditions. Where recorded, the isthmus was definitely the seat of implantation in over 50% of the cases, and in many others the tube was probably in such condition that an exact statement was impossible.

It is also interesting that about one-half the series presented evidences of previous infection of the genital tract, or at least an obstetric history suspicious in this respect.

The cause of the abnormal pregnancy is obscure in a great proportion, for although adhesions were present in many the records do not always speak of them as of long duration, and in some the opposite tube was reported normal. The scarcity of the statements in regard to adhesions is not to be wondered at, when we consider the necessity for speed at the time of operation and the ease with which localized adhesions might be overlooked.

There seems to be some evidence, however, that an inflammatory condition may have been, in most cases, the determining cause, or at least have produced conditions interfering with the processes of conception.

In regard to the pregnancy immediately preceding in 50 women: 30 were delivered at full term, 14 miscarried, 2 had an ectopic gestation, and no history was available in 4.

The remaining 12 of the 62 cases were primiparae.

Of the 30 delivered at full term, 5 showed marked evidence of old inflammatory processes.

In 9 of the 14 miscarrying at the previous pregnancy, from 3 to 5 years had elapsed without conception, while one had 6 miscarriages in succession after an attack of pelvic inflammation 7 years before.

Chronic salpingitis was reported by the pathologist in 4, but no other data were available.

Of the 12 primiparae: 1 had gonorrhea, 2 were single, 2 had chronic salpingitis, and 8 out of 10 women had been barren for from 2 to 9 years after marriage.

Simpson from his exhaustive study of sterility and fecundity concluded that the chance of pregnancy was slight after the lapse of 3 years of married life, during the period when the chance of fecundity was greatest.

In 38 cases the last pregnancy had been from 3 to 5 years previous in 13, from 5 to 15 years in 9, and of the remaining 16, who had conceived within 3 years, 9 miscarried.

The average number of children borne by 54 women of our series at an average age of 31 years, was 2.42; while the average was 3.27 in 100 women taken from the medical records and averaging 31.23 years.

Realizing that figures as to pregnancy are apt to be fallacious, for many reasons, those in the preceding paragraph are given with these limitations in mind.

It may be said, however, that nearly one-half of the cases had either some actual abnormality or some point in their history which would make us suspicious that a pathological condition might reasonably exist.

The 60 cases, in which data were given concerning symptoms, show that prodromal signs were absent in only 25%, and in 75% they were of considerable duration for the most part, and distinct enough to have attracted the attention of a physician had one been consulted.

Among the 60 cases were three of tubal abortion, but they presented nothing in previous symptoms or in acute onset which would differentiate them from rupture; and in fact, with many tubal abortions, there is a considerable amount of damage to the fimbriated extremity.

Amenorrhea was wanting in only slightly

over 10% of 60 cases with data, and these ruptured before the following period was due. Flowing in these cases came on early after the last period and was persistent or irregular, ending in early rupture.

It is such cases which are so often mistaken for an early miscarriage, while with those of longer duration definite warning abdominal symptoms are seldom absent.

Abnormal flowing occurred in almost every case (4 without) as a premonitory sign, and in slightly over 44% flow and pain were combined. Surprisingly few complained of abdominal pain as an early symptom (55%), and by still fewer (28%) was it localized, and then always in the lower abdomen.

According to this series, comparatively few ectopic gestations rupture without premonitory symptoms. Where sufficient time had elapsed, amenorrhea was always present to warn of a possibility, made more probable by the almost universal abnormal flow. The flow, in turn, was accompanied by pain in nearly one-half, and in 28% this pain was referred to the lower abdomen.

Not one of these cases was diagnosed previous to rupture, so far as is known.

We may also say, that with pain and flowing after amenorrhea, especially when preceded by longer periods without pregnancy, an investigation is always advisable.

The symptoms connected with rupture were such as are ordinarily given in text-books, and as patients entered the hospital only 2 gave difficulty in diagnosis and these were the only mistakes. One, with the uterus embedded in a symmetrical mass of clot, was mistaken for pregnancy. The second was diagnosed as a pelvic inflammation, and died without operation. This case was complicated by a patent foramen ovale and was in extremis.

Pelvic examination has given little aid in diagnosis, although a mass or a doughy feeling in the pelvis has been mentioned. Dullness in the flanks and shifting dullness have been noted in some, but have depended so much on the thickness of the abdominal wall and degree of intestinal distention as to be often of no special aid.

It is in these cases of rupture that the clots form slowly, and are of such a soft consistency as to be made out with difficulty, especially when hampered by the distention, which in itself has often been a mark of severe hemorrhage.

In connection with the appearance, history, location of pain, temperature, and physical examination, diagnosis has usually been clear.

Leucocytosis, when recorded, has been high in the majority and has furnished little aid in differentiating from sepsis, while no relation of the white count could be established to either the amount of blood or the duration of rupture. Some of the most serious had small counts, and one septic case a leucocytosis of only 7900.

The temperature has also not been elevated to such a degree as to suggest inflammatory processes, except in such cases as have been obviously infected at entrance. This is somewhat at variance with the reports in other series, where the greater number have had a temperature above normal.

The mortality of the series has already been given, and at once suggests the subject of treatment.

At the start, let it be understood that it is not intended to champion the cause of long delayed operations, for with the patient in reasonably good condition, operation at the earliest moment is always best, but from time to time papers have appeared urging immediate operation in every instance. To this view the writer takes exception, believing that the general application of this principle is wrong, and that a more moderate course is advisable.

In the not very distant past all ectopic gestations were treated expectantly, and it was not until 1849 that W. W. Harbert suggested laparotomy for the control of hemorrhage. Rogers in 1866, and Parry in 1876, again urged this treatment, which Tait was the first to adopt in 1883.

From that time to the present, operation has steadily increased in favor, until for the last twenty years it has been the recognized form of treatment, and when and how to operate the only question.

At a meeting of the American Gynecological Association, in 1908, the advisability of immediate, or delayed operation during shock was thoroughly discussed by men of large operative experience, the two factions being about equally divided.

Looking over the literature for the past few years, one finds many series of immediate operations with far better mortality than the present, but few with which it may be compared, as nearly all include tubal abortions—the less severe with the serious emergencies—and nearly all aim to show the necessity of haste. The statistics compiled by McDonald,[2] and the series of Ladinski,[3] Vineberg,[4] Price,[5] and others show excellent results for immediate operation; and it is manifestly unfair to refer to statistics of years long past, when abdominal surgery was not understood. It is also evident that the social or racial characteristics of the hospital clientele may have a considerable bearing on both methods and results.

Aside from Robb, who is a strong partisan, and Treub,[7] no one except Frank has apparently attempted to work out the problem of "delayed" or "immediate" operation with care. Frank's series is valuable because the individuals were treated in this country by one institution, and by both methods. His conclusions, however, as to operation do not seem entirely warranted by his statistics.

Furthermore, the term "immediate" operation, so often seen, is somewhat elastic, referring generally to the time when the patient was first seen, and not to the time of rupture; nor has it always appeared to indicate an emergency.

The period elapsing between rupture and operation varies widely in our series, and undoubtedly the same conditions prevail elsewhere, therefore the term is inexact. In this discussion, "immediate operation" has reference to the time of hospital admission, but the duration of acute symptoms has usually been hours, and in a few instances, days, before entrance. All, however, were emergencies at the time of operation, and in a condition of shock. With one exception all were operated.

Practically all patients came from the lower strata, where hygienic conditions and habits do not tend to great bodily resistance, and the question arises as to whether immediate operation was best for all, viewed in the light of the ultimate mortality.

Every surgeon sees those emergencies in which the ability of the patient to withstand the extra shock of immediate operation is doubtful, and he is called upon to decide whether the outlook for recovery would not be bettered by delay, and whether delay in his doubtful cases has been justified by the results.

There seems to be no question but that extra-tubal and intra-tubal rupture (tubal abortion) differ in frequency as well as mortality, for McDonald in a series of 1607 cases, found only three extra-tubal to every seven intra-tubal ruptures, while in the 215 cases operated on the service, rupture was related to abortion as 1 to 3.7.

Intra-tubal rupture, or tubal abortion, is generally characterized by repeated small hemorrhages, which eventually build a laminated clot. This circumscribed irritation of the peritoneum results in a mass of blood surrounded by adhesions, the pressure of the blood in the sac appearing itself to help control further bleeding, even though smaller hemorrhages occur from time to time. For this reason tubal abortions seldom furnish emergencies, as is evidenced by only three grave operative cases among the one hundred and fifty tubal abortions which have been treated by the gynecological service at the Boston City Hospital, and only two immediate operations in the series of Frank,—one of these without free blood in the abdomen.

The reaction of the peritoneum to these localized hemorrhages indicates very conclusively that with the sudden introduction of even a moderate amount of blood into the peritoneal cavity, varying degrees of peritoneal irritation and shock must follow. Our series apparently shows that few women die primarily of hemorrhage, as in only two of the sixty-two emergencies was active bleeding found at operation, and the majority reached the hospital on an average of eight to ten hours after rupture. That the condition of these acute cases is not due entirely to the loss of blood, is borne out by the fact that the shock, rate and character of the pulse are not always in proportion to the blood lost, and that similar symptoms appear after the sudden rupture of the larger ovarian cysts, when there is little loss of blood. One of Frank's cases, with a pulse of 96, was in marked collapse from rupture alone, without much loss of blood, and one of the emergencies at the Boston City Hospital had a pulse of 72, with the abdomen filled.

It is also the writer's observation that the peritoneum of different individuals reacts in varying degrees, even where conditions seem identical,—blood in one apparently causing few, in another many, adhesions. For the same reason, the shock may be profound with a comparatively small hemorrhage. Furthermore, the ability to withstand operation after severe accidents differs as regards both individuals and races.

Using the hemoglobin as a rough estimate of the extent of bleeding, with any considerable amount of blood in the peritoneum, neither prostration nor pulse-rate or volume has the reasonable relation to the hemoglobin percentage which might be expected in patients of apparently equal physical vigor, although it is true we do not know the exact conditions at the start. Greater prostration is often manifested after a comparatively small hemorrhage.

Estimation of hemoglobin and blood corpuscles immediately after hemorrhage shows no special change, but after six to twelve hours, fluid is absorbed from the tissues, and the percentages lowered. Since both red count and hemoglobin appear to undergo slight changes during the first few days after operation, the fluid content of the blood has seemingly adjusted itself temporarily by the time these women reach the hospital, and on this account salt solution should be preferably given in such a manner as to be slowly absorbed, if the conditions warrant delay, and only rarely by intravenous injection. Women who have been treated without intravenous injection appear to make better recoveries and to have a less lasting anemia, even where emergencies seem of equal gravity.

It has never been possible for the writer to perform a transfusion, but in the only two which it has been his fortune to follow after operation, the bettered appearance has promptly disappeared after the first two days, and the pallor markedly increased, showing no advantage over the use of salt solution.

Experience, and a review of these emergencies, leads the writer to believe that it is *shock* not previous hemorrhage, which is the cause of death in those grave cases which succumbed shortly after operation, and that the "immediate" operation is the last straw.

It seems fair to assume that a patient suffering from shock, after pain and hemorrhage, will be more or less worn by an ambulance trip with stretcher bearing at both ends, to say nothing of the psychic disturbance attendant upon probable operation. To add indiscriminately at this unfavorable moment the extra shock of anesthesia and an abdominal section, appears to the writer in certain cases extremely ill advised. The further decrease of resistance, due to operation, may also take away the ability to cope with organisms which under ordinary circumstances would be innocuous. Peritonitis following operation in such cases is often of a low grade, and in a number of cases it has probably arisen from a previous pelvic infection.

Most patients reach us hours after rupture, and as among sixty-one operative cases, only two were found with active bleeding noted; in taking the chance of hemorrhage, for a few hours at least, we are assuming no greater risk than in adding the shock of operation to that which already exists, as well as the possibility of infection in a state of very low bodily resistance.

It has also been said that patients are upon the "rebound" by the time the hospital is reached. This is true of some, but in others the opposite is equally true; and with the latter, reasonable delay allows opportunity to recover from the effects of transportation, preparation for operation, etc. In every very severe case, under careful supervision, delay should be extended, if possible, to include a reasonable recovery from shock. To this statement only one exception should be made,—the suspicion of active hemorrhage.

The pulse rate may rise slightly, but if the character improves and the rate steadies, no uneasiness need be felt on this account, while in many the rate will diminish after a short rest. Each case, however, must be considered on its own merits; and habits of life, race, and previous history mean something in addition to physical examination.

In the previously mentioned series of Frank, there were 42 ruptures, 21 of which were operated at once, and 21 "observed" before operation.

Of 77 operative cases in his list, including ruptures, abortions, hematoceles, etc., only 24 were operated immediately, including two tubal abortions and one hematocele. Four cases, comprising two ruptures, one hematocele, and one abortion, has no free blood in the abdomen, so that immediate operation was required in only twenty. The only deaths in the whole series were two operated in shock, and one septic hematocele.

Treub,[7] in 1908, published 151 cases (including tubal abortions) treated by deferred operation, excepting those with alarming symptoms, with a mortality of three.

Aside from three, dying of causes not directly connected with operation, there are eight of our own series who died of shock, and four with peritonitis,—all operated at once. Some of these, the writer believes, woud have lived had intervention been delayed, and in others, peritonitis might have been avoided by a more deliberate operation.

In no rupture has death resulted where operation has been delayed, by the writer, on account of the poor condition of the patient, but he regrets several who died as the result of an operation, undertaken during shock, for what was thought might be persistent hemorrhage.

As has been said before, the differences of the classes from which various hospitals draw their patients and the character of the emergencies received, renders it difficult to make fair comparisons, or to lay down rules suitable for all. When delay has been fairly tried, many serious extra-uterine emergencies have been tided over the critical period of shock, and have been operated successfully. Judging from the series upon which this article is based, and upon others which approach the matter without bias, the effect of an operation during shock is as much to be feared as continuance of hemorrhage, and delayed operation seems well suited to some, and immediate operation unnecessary for all.

On the side of the surgeon it often requires more courage to wait than to proceed immediately, but from the patient's standpoint, the teaching that "immediate" operation is always necessary is decidedly dangerous.

Tubal abortion, with its few emergencies and small mortality, is much more frequent than rupture, and not a few of the former will be treated under poor surroundings by the incompent, to say nothing of the real emergencies which demand still greater judgment and skill. For this reason alone, care is very necessary in advising this treatment under all circumstances; but for those patients who are in a suitable physical condition, amid proper surroundings, and in competent hands, immediate operation will always remain the proper choice.

REFERENCE.

[1] Robb: Am. Jour. Obstet., Vol. 58, 1908, p. 577.
[2] McDonald: N. Y. Med. Jour., Vol. xciii, p. 1084.
[3] Ladinski: Am. Jour. Obstet., 1908, Vol. 57, p. 55.
[4] Vineberg: N. Y. Med. Record, 1908, Vol. 74, p. 554.
[5] Price: Am. Jour. Obstet., 1892, Vol. 26, p. 859.
[6] Frank: Am. Jour. Obstet., Vol. 59, Feb., 1909, p. 211.
[7] Treub: L'Obstetrique 1908, N. S., Vol. i, p. 515.

Clinical Department.

LYMPHATIC LEUKAEMIA IN ACUTE INFECTION, AFTER REMOVAL OF THE SPLEEN.

BY JAMES MARSH JACKSON, M.D., BOSTON,

AND

WILLIAM DAVID SMITH, M.D., BOSTON.

A young man, a college student of twenty-one years, American.

F. H. Not remarkable.

P. H. Enlarged cervical glands removed in childhood. Typhoid fever in 1907. Splenectomy in Switzerland in 1909 following rupture of the spleen in a coasting accident. Blood examination made in Switzerland a few weeks after splenectomy showed essentially a normal blood picture, *i.e.*:

Red count	4,600,000
White count	7,800
Hgb.	68 to 70%
Polynuclear neutrophiles	58%
Small lymphocytes	22.5%
Large lymphocytes	2.5%
Transitional cells	10%
Eosinophiles	6%
Mast cells	1%

P. I. May 31, 1913, patient seen complaining of fatigue, moderate headache, sore-throat and slight stiffness of the neck. Tonsils moderately swollen and together with entire pharynx were dry and reddened, but without membrane or exudate. Glands at angle of jaw on right were slightly enlarged, hard, discrete and a little tender.

Temperature 99.4. Pulse 78.

June 2, condition unchanged except that glands on right were decidedly larger and there was discomfort on swallowing.

Temperature 100. Pulse 70.

June 3, condition worse. Tonsils swollen, especially the right, which approached median line. Glands on right side of neck now crowded together into a hard mass almost level with jaw but without fluctuation or evidence of softening. On the left side of neck were several discrete enlarged glands, size of chestnuts.

Temperature 101.6. Pulse 72.

Up to this time the case had been considered an acute tonsillar infection with secondary involvement of the glands of neck. A white count and smear done at this time gave the following result:

White count	40,000
Polynuclear neutrophiles	5%
Lymphocytes, large	59%
Lymphocytes, small	36%
Mast cells	0%
Eosinophiles	0%

A stained smear submitted to an eminent pathologist in Boston was reported as follows:

"The smears of blood submitted to me today show appearances which I regard as those of beginning lymphatic leukaemia. The presence of some very atypical basophilic mononuclear cells makes me very suspicious that the case is one of so-called 'acute lymphatic leukaemia'."

June 4, not much change in neck glands; inguinal glands on both sides enlarged to size of beans; axillary and epitrochlear glands also slightly enlarged.

Temperature 101. Pulse 72.

June 5, patient seen in consultation by a well-known Boston internist who confirmed the findings and also demonstrated a small area of relative dullness in the right back in region of root of lung. He considered the case a probable lymphatic leukaemia but suggested the possibility of an absent spleen modifying the blood picture.

June 6, decided improvement in all symptoms, throat less sore, size of glands in neck definitely diminishing, temperature 99.2, pulse 68.

June 8, patient up and about, continued improvement; neck glands palpable but small.

Blood examination—

Red count	5,400,000
White count	32,600
Hgb.	90—95%
Polynuclear leucocytes	13%
Lymphocytes, large	70%
Lymphocytes, small	17%
Mast cells	less than ½%
Eosinophiles	0%

June 19, apparently well and leading a normal life.

White count	17,000
Polynuclear neutrophiles	16%
Lymphocytes, large	70%
Lymphocytes, small	13%
Mast cells	1%
Eosinophiles	0%

July 14, apparently perfectly well; no palpable glands; white count 10,800.

Aug. 23, 1913.

White count	7,000
Polynuclear neutrophiles	33%
Lymphocytes, large	43%
Lymphocytes, small	21%
Mast cells	½%
Eosinophiles	2.5%

*April 15, 1914.

No leucocytosis. Red cells normal. Platelets much increased in number.

Polynuclear neutrophiles	75%
Lymphocytes, large	6%
Lymphocytes, small	13%
Eosinophiles	6%

SUMMARY.

A young man a few weeks after removal of spleen in 1909 showed an essentially normal blood picture.

In 1913, he developed what seemed clinically an acute tonsillar infection; this was quickly followed by marked enlargement of glands of neck and moderate general glandular enlargement involving axillary, inguinal and epitrochlear glands.

This situation was accompanied by a blood picture so typically that of lymphatic leukaemia that no other diagnosis seemed possible.

After a week of sore-throat, general malaise and moderate elevation of temperature the symptoms abated and a normal convalescence as from an acute infection ensued.

Blood examinations done from time to time showed a gradual diminution in the white count and a change in the blood picture from that of a typical lymphatic leukaemia on June 3, 1913, to an approximately normal picture on Aug. 23, 1913 and a normal picture on April 15, 1914.

---

* This examination was made by Dr. Willard S. Parker.

SUB-MUCOUS RESECTION AS A MEANS OF OBLITERATING SUPERFICIAL BLOOD VESSELS.

BY JOSEPH PRENN, M.D., BOSTON.

IN the *Laryngoscope* of October, 1914, Dr. John A. Thompson, in his article "Uncommon Case of Nasal Hemorrhage," remarks that "the unusual feature was the method of cure by submucous resection."

In the summer of 1914, at the out-patient department of the Boston City Hospital, a submucous resection was done with the same object in view,—that of curing a nasal hemorrhage. The theory upon which this operation was based was, that after taking out the cartilage of the septum a new circulation for the fibrous tissue formation of the septum would have to be established. The endothelial cells of the existing capillaries would have to multiply to form new blood vessels and the current directed inward. The mucosa then will get the amount of blood supply needed for its existence, but not too much to squander. (The increase of the flow of blood to one part of the body, while at the same time diminishing it in another part of the body, goes on in the human economy physiologically as, for instance, during the process of digestion). The result justified the theory.

The patient in question was plethoric. The mucous membrane of the septum was congested. Superficial blood vessels and many bleeding points were present. He also had a vomerian ridge on the bleeding side, not wholly obstructive, but undoubtedly increasing the congestion.

Bleeding during the operation was rather more than usual. (No novocaine with suprarenalin infiltration was used). When the patient was examined at the end of a few weeks the septum was straight, the congestion of the mucosa was all gone, and no bleeding points or superficial blood vessels were to be seen over the operated area. Whether it is advisable to operate during the congested stage, or to wait until the congestion is over, depends upon the case. This case is reported by courtesy of the throat department, Boston City Hospital.

Another case was that of a patient coming to the office with the usual history of frequent nasal catarrh, nasal obstruction, dryness of throat, occasional nose bleed. The tip of the nose was red for the last two years, and the patient, a boy of twenty-one, of good habits, wanted to know whether the latter could be helped.

Examination showed sub-acute rhinitis, mucopurulent discharge along the floor of the nose, not pointing to any of the sinuses. The mucous membrane over the cartilaginous part of the septum showed radiating blood vessels on one side, slight anterior deviation with basal spurs on either side, bathed in pus, touching the inferior turbinates, and would not admit a probe. Local application of protargol was used and alkaline spray was prescribed. Operation was advised in about a week, believing that it would also do away with the congestion of the tip. The latter belief was based upon the following consideration. The redness of the lobule of the nose, when brought about by inflammatory conditions of the nasal mucosa (and that is usually the case), is due to the existing anastomosis between the blood vessels and the plexus of the skin of the tip of the nose. It stands to reason then, that should we cut the anastomosis at the muco-cutaneous junction, further congestion would be stopped, and if we will allow the cut to heal by "second intention," more blood will be necessary to granulate the surface, and the congestion ought to be entirely relieved. That is apparently what happened in this case. The redness of the tip disappeared the second day after the operation, and remained so. No superficial blood vessels of the mucosa are to be seen. The septum is straight.

In order to cut the anastomosis at all points, two incisions about a half an inch in length, at about right angles to the classical vertical incision were made, one at the floor, and the other at the roof of the nose so that they formed a flap. The flap was not sutured, but simply put in place to prevent healing by "first intention."

N.B. The difference between "first" and "second intention" as used in this article is not as marked as in other parts of surgery, for in either case, we are dealing here with linear incisions.

Medical Progress.

PROGRESS IN TUBERCULOSIS.

BY JOHN B. HAWES, 2D, M.D., BOSTON,

Assistant Visiting Physician, Director Tuberculosis Clinic, Massachusetts General Hospital,

AND

P. CHALLIS BARTLETT, M.D., BOSTON,

Assistant, Tuberculosis Clinic, Massachusetts General Hospital.

THE literature on tuberculosis is so enormous, and the work that has been done during the last few years covers such an immense field, that a review of this subject must perforce confine itself to the barest summary of the most striking features. It should also be remembered that there is sure to be a wide difference of opinion as to what are the more important articles and points which deserve comment. We therefore state in the beginning that in this review special attention will be paid to the clinical and practical side of this subject and to those features which we believe will be of help to the medical profession as a whole and not merely to one small group.

Diagnosis. Progress in the early diagnosis of pulmonary tuberculosis or in the diagnosis of early pulmonary tuberculosis seems to have been steady though slow during the past few years. In the field of tuberculosis in infancy and childhood, especially in the recognition of bronchial gland tuberculosis, much work has been done and distinct progress made. Of great importance in this regard is the fact that the difference between tuberculous *infection* and tuberculous *disease* is more clearly recognized. Attention has been called to this by Pritchard,[1] Hawes,[2] and Bailey.[3] In bronchial gland tuberculosis the x-ray has its greatest field of usefulness. Crookshank[4] strongly urges that "the general practitioner should be encouraged to recognize early enlargement of the tracheo-bronchial glands with no lesser zest than would apply to the diagnosis of the secondary symptoms of syphilis." "It is certain that as many children suffer at one time or another from lodgment of tubercle bacilli in this or that group of glands as from measles or from chickenpox." "The care of the child is the root of the problem in dealing with tuberculosis." In diagnosing bronchial gland tuberculosis the value of "d'Espine's sign" as evidence of enlarged, *but not necessarily tuberculous glands* has been wisely emphasized by many. Likewise, in X-ray work, it has been shown that enlarged glands at the lung roots may be due to many other infections aside from tuberculous. These are most important points.

Lucas[5] presents good diagrams showing the relation of bronchial glands to the bronchi and urges further study of this form of tuberculosis. Treatment of these early cases of infection brings excellent results; if there is a delay until more striking evidence of disease is present, the chances of recovery are too often gone. Lucas gives a most instructive symptom-complex of tuberculosis in children which should be read by every physician. It is of interest to compare this with a similar symptom-complex published in the 1913 report of the Massachusetts Tuberculosis Commission.

In adult disease, the X-ray workers are as enthusiastic as ever, declaring that by means of the X-ray lesions can be discovered in the lungs long before they can be recognized by clinical investigation. These are the words of enthusiasts however. The majority of the profession whose opinion is of value in this line, take the more conservative view that while the X-ray is a useful adjunct and should be made a part of a routine clinical investigation, it should never replace clinical methods. Moore[6] states that "the *gross* lesions of pulmonary tuberculosis give characteristic appearances on the radiograph," but that in "the border-line cases the Roentgen ray cannot determine the activity of a tuberculous process."

Claypole[7] describes human streptotrichosis as a cause of error in diagnosis and is of the opinion that it is commoner than is supposed to be the case. Lee[8] presents in detail several cases of this type. Davis[9] describes the lesions of nocardia and states that they "clinically are not ordinarily distinguished from pulmonary tuberculosis." L. Brown[10] in a most interesting paper discusses errors in diagnosis of pulmonary tuberculosis. Among other conditions which may be mistaken for tuberculosis he describes cases of Hodgkin's disease, malignant tumors, syphilis and cardiac disease.

Ewart[11] describes "Perez' sign"—motor joint crackles—as a possible source of confusion in diagnosis. Hawes[12] has confirmed this point on a large number of patients and has taken up as well the part played by muscle sounds, tendon or bursal sounds, and atelectasis in addition to motor joint crackles. He concludes that only muscle sounds and motor joint crackles are real sources of error, and urges that in all doubtful cases the patient be made "to go through the motions of breathing" without taking any air into the lungs through mouth or nose, in order to decide whether the sounds heard are râles or are due to extraneous causes.

In regard to specific diagnosis, much work has been done but little real progress made. In children 5 years old or under, a positive skin tuberculin reaction is recognized to be of the greatest value as pointing to a tuberculous infection; in adults, only a positive subcutaneous tuberculin test performed by experts with a *local* as well as as a *general* reaction is of value. Fildes,[13] Radcliffe, and McIntosh, Pringsheim[14] and others, have discussed this subject at length.

The various concentration methods of sputum examination by anti-formin and in other ways, have a definite place in sanatoria and other institutions. As a means of diagnosis for the general practitioner, there are hardly available.

On the whole, the medical profession seems to be slowly but surely learning that it is not by any specific tuberculin reaction, X-ray, etc., but by a careful and painstaking study of the patient's history, occupation, habits, constitutional and local signs and symptoms, that the diagnosis of early pulmonary tuberculosis can be made.

Prognosis.—Progress in estimating the patient's chances in the future has consisted chiefly in relegating to their proper places various tests which at first were thought to be of great value in prognosis. The study of the leucocytes, according to Arneth[15] with the shifting of the nuclear picture to the left or the right attracted undue attention. While in certain cases it gives valuable evidence, the technique is far too difficult, the process too long, and the chances of individual error too great to make it a factor of any importance in prognosis. Likewise with regard to the diazo and urochromagen reactions, final results have not shown these tests to be of real help. On the other hand it seems to be accepted that a gradual decrease in the number of bacilli in the sputum with particular reference to the appearance of degenerative forms, etc., is of some value providing, of course, that the work is done by one qualified to judge. Kirchenstein[16] from Spengler's private laboratory at Davos writes interestingly on this subject. Brown[17] in a paper entitled, "When is a tuberculous patient cured?" concludes with the following sentences which merit grave consideration: "In conclusion, as a confession of faith, I may say that I believe that pulmonary tuberculosis is curable; that spontaneous healing of tuberculous infection occurs frequently, that healing of clinical tuberculosis may, but rarely does, occur; that permanent arrest is the most frequent termination of the disease in those who are later able to follow their usual occupations; that temporary arrest of longer or shorter duration occurs in all except the acute cases; and that continually progressive disease follows only upon several temporary arrests."

This is a sound and sane summary of "prognosis" in pulmonary tuberculosis. Fishberg[18] and others, however, have written in the more optimistic view calling attention to the fact that while the frequency of tuberculosis is not decreasing, its power to kill is slowly but steadily diminishing.

Treatment.—A consideration of progress in the treatment of pulmonary and non-pulmonary tuberculosis may naturally be divided as follows:

1. Is sanatorium treatment worth while?
2. Artificial pneumothorax and its value.
3. Tuberculin and its value in treatment.
4. Sunlight treatment—heliotherapy.

Is sanatorium treatment worth while?

Much has been written pro and con on this subject. Wilkinson[19] of England is the strongest upholder of the negative. He believes so firmly in the curative power of tuberculin that he sees no possible use in sanatorium or any other form of treatment except that of tuberculin. His theories are yet to be proved, however. The great majority of writers, while of the opinion that much can be done to promote the efficiency of sanatorium treatment, and that it is still far from perfect, still believe that it offers the greatest opportunity for the cure or arrest of the disease that we have at our disposal. Bailey[20] and MacCorison describe a scheme for promoting the efficiency of sanatoria by dividing patients into a "sanatorium" and a "hospital" class. In the former are placed all those patients who are really trying to get well and who coöperate with their physicians. To the latter class belong those who merely regard the sanatorium as a first-class boarding house. That this system is capable of bringing about excellent results has been clearly demonstrated in Massachusetts Sanatoria. Hawes[21] describes what is done in Massachusetts to keep the patient well after leaving the sanatorium, and the methods whereby coöperation of local forces, public and private, may be obtained. Bolduan[22] of New York, in a distinctly pessimistic view, speaks of the futility of taking patients out of bad surroundings to send them to a sanatorium and then allowing them to return to the same bad conditions at home. Goldstein,[23] writing also from the New York point of view, urges that special factories or other specially conducted places of employment be created for giving suitable employment to post-sanatorium cases. Numberless other papers have been written on this subject. The general feeling seems to be that the sanatorium is worth while; that it does play a large part in our tuberculosis campaign, but that to make it occupy the place it really should hold, the treatment of the patient should begin long before he enters and long after he leaves the institution. This, as Pottenger[24] clearly points out, means the prevention, detection, and treatment of tuberculous infection in childhood and the supervision of the consumptive after leaving the sanatorium.

Artificial Pneumothorax and Its Value. The medical profession seems to have reached a saner point of view in regard to the value of this method of treatment than was the case a year ago. Saugman[25] states as his impression after seven years' treatment of over 200 cases, that during the first six months this treatment should be carried on only in a sanatorium or hospital and that "only in exceptional instances should pneumothorax be used on patients in their homes." Balboni[26] states that "the patient ought to follow sanatorium régime treatment at the same time." Unfortunately, few if any of his patients were actually in a sanatorium while under treatment, but were living at home, many of them in the crowded parts of the city. Balboni further states that "the patient should be fully informed that the treatment is long, tedious troublesome, and expensive, and not devoid of dangers." Lyon[27] describes results as obtained at the Rutland State Sanatorium in Massachusetts. Floyd[28] of Boston describes the class of cases suitable for this treatment. The general feeling is that this treatment in skilled hands, under careful supervision in a sanatorium or hospital, may do a great deal of good in a small group of selected cases who do not respond to other methods of treatment.

Tuberculin and Its Value in Treatment. As stated above, Wilkinson[29] of England is the foremost in the ranks of those who believe tuberculin will cure all forms of pulmonary tuberculosis. His claims are so extravagant, however, as to lose nearly all value. Bennett,[30] in a most useful little book urges great conservatism in the use of tuberculin in pulmonary disease. The opinion of the majority of those able to judge is that tuberculin, like artificial pneumothorax, may do good in selected cases, particularly those without fever, and who have reached a stationary condition; but that it should only be given by those skilled in its use and when the patient is under constant medical supervision. No comment is needed on the Friedman episode, which is now a thing of the past.

Sunlight Treatment or Heliotherapy.—That direct sunlight has a remarkably beneficial effect on all forms of tuberculosis is a fact that has not been sufficiently impressed on the minds of the medical profession. The work of Rollier[31] in Leysin, France, which had not attracted attention until very recently, is now a subject of almost universal comment and discussion. During the past year, not only Dr. Rollier's own description of his work, but the articles by Hinsdale[32] and others have made the profession realize the importance of this hitherto neglected method of treatment. Patients are exposed to direct sunlight little by little, first beginning with the feet below the knees, for five minutes five times a day, and then increasing so that finally the entire body is bare for several hours at a time. This process of gradually exposing the skin to the sun must be carried on with care or else bad effects may follow. The results on the local process as well as on the patient's general condition are remarkable; were it not for actual photographs, they would scarcely be believed. Such treatment in modified form is now being carried on in this country, especially at Buffalo, New York, and at the Westfield State Sanatorium in Massachusetts. Heliotherapy is such a cheap form of treatment and under anything like adequate supervision is capable of bringing about such good results that its use is bound to become far more widespread. It would be an excellent thing if every physician were to read either Rollier's original papers or Hinsdale's description of Rollier's work.

Bovine Tuberculosis. The importance of the campaign for clean milk in the prevention of various forms of tuberculosis is becoming more and more recognized. Mitchell[33] states that "cows' milk containing bovine tubercle bacilli is clearly the cause of 90% of the cases of tuberculous cervical glands in infants and children." He refers particularly to the district around Edinburgh where tuberculosis in cattle seems to be particularly common. Although German observers do not confirm Mitchell's or Fraser's[34] figures, placing the percentage of bovine infection so very high, yet they agree that bovine tuberculosis is a much more important factor than was formerly considered to be the case. The teeth and faucial tonsils are the most important channels of infection in these cases.

Laryngeal Tuberculosis. Much has been written on laryngeal tuberculosis and its treatment. The general feeling in this country that this was secondary to a pulmonary process, and that its progress toward healing depended almost entirely on that of the patient himself, led to a somewhat over conservative attitude toward this condition and a tendency to let it entirely alone, except for mild palliative measures. At present this feeling seems to be changing somewhat and a tendency toward more radical measures to be taking its place. St. Clair Thompson[35] takes the conservative standpoint that "sanatorium treatment is at present the first and most valuable method we have for arresting laryngeal tuberculosis," and that "local measures are much more promising under sanatorium treatment." This point of view, which places sanatorium treatment first, but which does not do away with local treatment, radically operative or otherwise, seems eminently sane and sound.

Non-Pulmonary or "Surgical" Tuberculosis. Of all forms of non-pulmonary tuberculosis, that of the cervical glands and of the genito-urinary tract has received the most attention. There has been a marked change in the attitude of most surgeons as to the treatment of tuberculous cervical adenitis. While there are still a few, notably Dowd[36] of New York, Fraser of Philadelphia, Ladd[37] of Boston, and others, who still claim that the so-called "radical operation for the removal of tuberculous cervical glands" is the best and safest course in all cases, the vast majority of the medical profession are now apt to look upon an operation in those cases "as an incident great or small as the case may be, in a course of treatment the most important part of which comes before and after operation." Hastings[38] of New York, Rollier[39] of France, Chadwick,[40] Hawes,[41] and numberless others, have clearly demonstrated that in most cases of tuberculous cervical adenitis, by the removal of diseased tonsils and the cleaning up or removal of decayed teeth, and by proper hygienic constitutional treatment with food, fresh air, heliotherapy, tuberculin, and other measures, an operation is sometimes rendered absolutely unnecessary, and often reduced to some simple measure, such as opening and draining a small abscess cavity. In many cases, as shown by Hastings and Hawes, tuberculin alone seems to cause the glands to disappear, while the results obtained by Rollier and those who have tried this method of treatment show how unnecessary and useless the radical operation may be.

Genito-Urinary Tuberculosis. In genito-urinary tuberculosis, Barney[42] has done a valuable piece of work in calling attention to the seriousness of tuberculous epididymitis and by showing in how large a percentage of cases even under excellent treatment this condition is followed by generalized tuberculosis of the genito-urinary tract. O'Neil[43] and Hawes have urged the use of hygienic measures and of tuberculin in all forms of tuberculosis of this region, before, after, and sometimes in place of, operative treatment.

Economic and Social Aspects of the Tuberculosis Problems. Progress in this direction has been along lines laid down sometime in the past. Chief among studies in the economic and social aspects of this disease are those which call attention to the dangers of open cases of tuberculosis and the need of preventing this source of infection if progress is to be made. Lampson[44] presents an interesting study of the spread of tuberculosis in tuberculous families showing that "67% of the individuals of these families (in which there was an open case of tuberculosis) excluding the centre cases, show evidence of tuberculous infection." The fact that his chief criterion of tuberculous infection was the von

Pirquet skin reaction, tends to detract from the force of his statement. MacCorison and Burns[45] of the North Reading State Sanatorium in Massachusetts, in similar fashion, have made a careful study of a large number of the families from which their patients came, with equally striking results. Their positive cases were ones of clinical tuberculosis, however, and not those with a positive skin tuberculin reaction only. Hawes[46] has carried this work still further and has shown the immense amount of good that can be done by following up patients discharged from sanatoria and by introducing a system whereby such patients can be kept under proper supervision and the members of their families examined.

CONCLUSION.

In conclusion it seems to us that in the diagnosis of adult tuberculosis, progress has been made not along any one line, such as the x-ray, tuberculin, etc., but by a realization that careful and detailed study of the patient, his history, constitutional signs and symptoms, as well as his lungs, will enable us to make an early diagnosis of this disease.

Bronchial gland tuberculosis in childhood, and its diagnosis with a clear conception of the symptom-complex of childhood tuberculosis, is a subject the importance of which cannot be overestimated. The increasing interest in condition by the medical profession is alone a distinct step in advance.

In treatment, the use of sunlight in all forms of tuberculosis is the great step forwards. Artificial pneumothorax has assumed its true position as an agent of value in a certain small group of eases; tuberculin is looked upon more conservatively in pulmonary disease and as an agent of great value in non-pulmonary tuberculosis.

From the economic and social side it is gratifying to note that childhood infection and its prevention and also the supervision of the consumptive *before* and *after* he goes to a sanatorium have been given the important consideration that they deserve.

REFERENCES.

[1] Prichard: Practitioner, No. 535, Vol. xc, No. 1, 1913.

[2] Hawes: BOSTON MED. AND SURG. JOUR., Vol. clxx, No. 21, pp. 784-786, May 21, 1914. Early Pulmonary Tuberculosis. William Wood & Company, 1913.

[3] Bailey: Letter to Physicians. Transactions, Massachusetts Trustees of Hospitals for Consumptives, 1914.

[4] Crookshank: Interstate Medical Journal, Vol. xxi, No. 4, p. 881.

[5] Lucas: California State Journal of Medicine, Vol. xxi, No. 8, p. 882.

[6] Moore, A. B.: Recent Studies of Tuberculosis. Interstate Medical Journal, Medical Symposium Series, No. 3, p. 116.

[7] Claypole, E.: The Arch. Int. Medicine, Vol. xiv, No. 1, p. 104, 1914.

[8] Lee: BOSTON MED. AND SURG. JOUR., Vol. clxix, No. 14, pp. 502-503, Oct. 2, 1913.

[9] Davis, J. D.: Arch. Int. Med., Vol. xiv, No. 1, p. 1, 1914.

[10] Brown, L.: Johns Hopkins Hosp. Bull., Baltimore, Vol. xxv, p. 112, 1914.

[11] Ewart: British Medical Journal, April 6, 1912.

[12] Hawes, J. B.: A Study of Extra-Pulmonary Sounds. BOSTON MED. AND SURG. JOUR., Vol. clxx, No. 25, pp. 953-955.

[13] McIntosh, Fildes and Radcliffe: The Lancet, Vol. ii, No. 8, p. 485, 1914.

[14] Pringsheim: Münchener medizinische Wochenschrift, Vol. lxi, No. 14, p. 757, 1914.

[15] Arneth, J.: Die Lungenschwindsucht, etc., Leipzig, 1905. J. A. Baath.

[16] Kirchenstein, A.: Beiträge zur Klinik der Tuberkulöse, Würzburg, Vol. xxxi, No. 1, p. 85.

[17] Brown, L.: Tr. Am. Climat. Asso., Philadelphia, Vol. xxix, p. 313, 1913.

[18] Fishberg, M.: New York Medical Journal, Vol. C, No. 11, p. 498, 1914.

[19] Wilkinson: Practitioner, No. 585, Vol. xc, No. 1, Jan., 1913.

[20] Bailey and MacCorison: Transactions, National Tuberculosis Association, May, 1914.

[21] Hawes, J. B.: BOSTON MED. AND SURG. JOUR., Vol. clxxi, No. 6, pp. 217-220, August 6, 1914.

[22] Bolduan: Transactions, National Tuberculosis Association, May, 1914.

[23] Goldstein: Transactions, National Tuberculosis Association, May, 1914.

[24] Pottenger: California Medical Journal, Vol. xii, No. 8, p. 318, 1914.

[25] Saugman: Beiträge zur Klinik der Tuberkulöse, Vol. xxxi, No. 3, p. 571.

[26] Balboni: BOSTON MED. AND SURG. JOUR., Vol. clxxi, No. 4, p. 1147.

[27] Lyon.: BOSTON MED. AND SURG. JOUR., Vol. clxxi, No. 9, p. 329, 1914.

[28] Floyd: Transactions, Massachusetts Medical Society, June, 1914.

[29] Wilkinson: *Loc. cit.*

[30] Bennett: Plain Rules for the Use of Tuberculin. William Wood & Company, New York, 1914.

[31] Rollier: Paris Médical, No. 11, p. 257, 1913.

[32] Hinsdale: Interstate Medical Journal, Vol. xxi, No. 3, p, 279.

[33] Mitchell, P.: British Medical Journal, Vol. i, p. 125, 1914. Edinburgh Medical Journal, September, 1914.

[34] Fraser: Royal British Commission on Tuberculosis. Second or Third Interim Reports, 1912. British Medical Journal, Apr. 12, 1913.

[35] Thompson, St. Clair: British Medical Journal, Vol. i, p. 801, 1914.

[36] Dowd: Transactions, International Congress of Tuberculosis, 1908, Vol. ii, p. 54.

[37] Ladd, W. E.: BOSTON MED. AND SURG. JOUR., Vol. clxx, No. 14, p. 532, 1914.

[38] Hastings: American Journal of the Medical Sciences, August, 1912, No. 2, Vol. clxiv, p. 245; September, 1912, No. 3, Vol. cxliv, p. 403.

[39] Rollier: *Loc. cit.*

[40] Chadwick: Transactions, Massachusetts Medical Society, June, 1914.

[41] Hawes: Transactions, Massachusetts Medical Society, June, 1914. American Journal of Medical Sciences, July, 1913, Vol. cxlvi, No. 1, p. 10.

[42] Barney: BOSTON MED. AND SURG. JOUR., Vol. clxviii, No. 25, pp. 923-927, June 19, 1913.

[43] O'Neil & Hawes: BOSTON MED. AND SURG. JOUR., Vol. clxix, No. 14, pp. 492-495, Oct. 2, 1913.

[44] Lampson: Bulletin of University of Minnesota,— Studies in Public Health, No. 1.

[45] MacCorison and Burns: BOSTON MED. AND SURG. JOUR., Vol. clxix, No. 7, pp. 224-228.

[46] Hawes: *Loc. cit.*, No. 21.

◆

Reports of Societies.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

MEETING OF WEDNESDAY, NOV. 25, 1914, AT 8.30 P.M.
THE PRESIDENT, DR. WILLIAM DUFFIELD ROBINSON, IN THE CHAIR.

SYMPOSIUM: THE PREVENTION OF DEFORMITIES.

SCHOOL LIFE AND THE ONSET OF DEFORMITIES.

DR. WALTER S. CORNELL, Director Division of Medical Inspection of Public Schools: An article appearing in a recent issue of *The Weekly Roster* called attention to the importance of orthopedic defects from a standpoint not usually considered by the physician. The broad viewpoint outlined we would do well as physicians to consider: "Deformity is to be seen everywhere. Its presence is deplorable as it tells in very loud words of the physical and emotional suffering of the afflicted and the terrible handicap they are doomed to carry through life. It is indeed to be deplored that the persons so afflicted in very large proportion could be, but were not, treated in early life so as to have been cured or very greatly improved. The distress and resentment of many entering adult life. when they contemplate what might have been done for them, is not pleasant to consider."

Deformities considered in connection with school life are almost entirely those of the spine, comprising principally stoop shoulders and lateral curvature. We need only to mention the intimate relation of a contracted chest to tuberculosis, general malnutrition and the prevalence of lateral curvature to appreciate the major relative importance of these two physical defects to the entire remaining field of orthopedics. It is the consideration of physical defects in their association with others that forms the most basic principle of medicine in the study of growing children. Stoop shoulders and flat chest are in this paper considered as one condition. The causes of stoop shoulders are many. Workers in tuberculosis hospitals first noted the close association of pulmonary tuberculosis with the condition and provided nose and throat dispensaries that fresh air might be obtained by these patients through their noses as well as through house windows. The causal relation of low nerve tone and malnutrition, of defective eye-sight and hearing, and of low neuro-muscular tone has also been recognized. Most cases of lateral curvature are primary in causation and due to fatigue of the back muscles from over-long school periods. Our school curriculum should be amended to provide frequent periods of bodily freedom and relief. It will be remembered that "Ben Hur" asked to row alternately on the starboard and port sides of the galley, upon noticing the one-sided development of his fellow galley slaves. The routine medical inspection of children will prevent a certain proportion of the stoop shoulders and scoliosis by the correction of myopia and astigmatism, removal of nasal obstruction and treatment of catarrhal deafness. The great attack must be made from the standpoint of personal hygiene, the standpoint of direct corrective exercises. The system of corrective exercises just introduced into the Philadelphia schools is under the direction of the Department of Physical Education, which coöperates with the Department of School Medical Inspection. Special exercises are given these children in the schools and to be performed at home. I would make an earnest plea for the greater emphasis by orthopedists upon the common defects rather than upon new operations for serious and crippling deformities; a plea to the medical profession for the recognition of the symptom complexes in developing children; a plea for the medical care of patients upon the basis of hygienic living, with the courage to charge for advice which prevents disease; a plea for the better understanding of the intimate relationship of defects of the teeth to defects of the nose and throat; and finally, a plea for the recognition by medical colleges of the necessity of instruction to students upon the diseases and defects of children of school age.

TUBERCULOSIS IN RELATION TO DEFORMITIES AND THEIR PREVENTION.

DR. HENRY LING TAYLOR, New York City: Tuberculosis of the bones and joints is one of the commonest causes of crippling deformities which are a grave personal handicap and a serious economic loss to the community. In order to prevent the annual increase in the number of incapables from this source, we must first direct our preventive measures against the dissemination of tuberculosis:—

1. By official inspection of herds and milk products, with the view of stamping out bovine tuberculosis and preventing the distribution of contaminated dairy products.
2. By segregation of the distribution of human tubercle bacilli and the disinfection of their sputa.
3. By the invigoration of children and youths and adults through a more hygienic life.

When a tuberculous joint is present we must make an early and accurate diagnosis and institute effectual treatment as early as possible, continuing it until the disease is quiescent. During this time the joint must be fixed in its most useful position so that when the disease is arrested the limb may still be serviceable, even if joint motion is diminished or absent. Severe terminal deformities of the limb may be corrected nearly always by safe and comparatively simple surgical operations and should be so corrected much oftener than they are. Without having exact figures, I do not think joint tuberculosis is quite as common in New York, and probably in other large towns in this region as formerly. We do not see so many severely deformed people on the streets. Whatever difference of opinion there may be about the bovine infection of tuberculosis there is no difference in opinion of the practical results of having children in close companionship with advanced consumptives. Time and time again I have found cases in the clinic in which the child was sleeping in an unventilated room with the father in an advanced stage of tuberculosis and three and four cases of tuberculous infection in the same family. These were not inherited cases, for we have seen the same thing in those of the same household but not related. In one case we found that the nurse of a baby was tuberculous. Failure in early and accurate diagnosis of deformity in bone and joint tuberculosis is as common as it is disastrous. Probably one-half of the fixed deformities are due to mistaken diagnosis or no diagnosis at all. The early diagnosis is not always easy even for specialists. The term "rheumatism" is one which is rapidly passing out of use in scientific language. "Rheumatism" means infection and the source should be ascertained. There should be willingness to examine thoroughly cases which seem to be trivial. The patient should be built up by general hygiene as in pulmonary tuberculosis, and probably a systematic application of sunlight to the naked skin, according to an exact and simple technic, is the most important advance in the last ten years in the treatment of surgical tuberculosis. In our fresh air home on Long Island we have just finished our eighth year and the average gain in children kept out in the open air has been seven pounds per summer per child for seven years. In the last year we have used direct sunlight treatment, putting the children in the sunlight for six hours a day without a stitch on them and the results have justified the belief that this treatment is probably the most important advance in the treatment of joint tuberculosis in the last ten years. In the local treatment of tuberculous joints, with fixation properly applied, you will have little need of traction. The limitation of activity is extremely important. If the simple principle is observed of fixing the joint in the most useful posture more than half of the bad deformities will be prevented. We operate freely in adults and sparingly in children.

THE STATUS OF THE GENERAL PRACTITIONER IN THE PREVENTION AND CORRECTION OF DEFORMITIES.

Dr. H. Augustus Wilson: Your committee has deemed it desirable to consider the status of the general practitioner in the prevention and correction of deformity. The orthopedic surgeon, being often the court of last resort in cases of progressive bodily deformity, is in a position to review all of the past history of the patient. One constantly hears that the family physician has given assurance that the child would outgrow its bow-legs; that the early pain of tuberculous bone disease was growing pains; that non-tuberculous processes were rheumatism; that normal feet of children required arch supporters. The general practitioner in the country differs widely from the general practitioner in the city. The former is compelled, and the latter elects, to prescribe for all conditions. In city life there appear to be three types of the general practitioner: (1) The self-contained physician who elects to be the medical autocrat; (2) the distributor to specialists; (3) the coöperator. The self-contained autocrat attempts to emulate the country doctor without the necessity of so doing. The increasing specialization has become a necessity, because of the disasters often caused by the self-contained autocrat. The distributing general practitioner is usually a skilful diagnostician with insufficient confidence in his own knowledge of therapeutic measures. He selects a specialist to whom the patient is sent with instructions to remain under his care for the specific lesion. It is difficult to determine the divided condition of the patient affected with three or more so-called special diseases, as seen in the case of a young girl of sixteen who within a period of four months was elaborately studied by ten different specialists. The coöperating general practitioner is the highest type of all, for he combines the best and avoids the worst features of the others. It has been my experience that the best ultimate results have been obtained when I remained in coöperation with the general practitioner. In the great majority of conditions ultimately becoming orthopedic problems, the onset and early progress are so inconspicuous that in the beginning they defy accurate diagnosis. It would seem that the general practitioner has the largest opportunity to determine the relative importance of the various etiological factors in scoliosis in school children. In the early history of bone tuberculosis there is a period of uncertainty when the symptoms are attributed to other causes. The referred pains are usually classed as "rheumatism," a word which should be stricken from our vocabulary. The etiological importance of the eruptive fevers in the producing of joint affections; of typhoid fever in post-typhoid dislocations; of often remote gonorrhea in subsequent arthritis; of various factors in numerous forms of backache; and of pyorrhea in a vast variety of non-tuberculous joint affections, as well as the expedience of employing passive motion in treatment, is a problem worthy of close attention. The general practitioner has a most difficult task when he encounters congenital deformities. Whether he knows it or not, he is confronted with Wolf's law that all prolonged alteration of the function of any part of the body, either congenital or acquired, is surely followed by anatomical changes. He must analyze carefully the many conflicting statements regarding the advisability of immediate correction or of postponement. After all the various problem-students have made their reports, it is often the province of the family physician to decide, for the family, upon the actual diagnosis and to direct the treatment. The various laboratory aids to diagnosis, when combined with an analysis of clinical findings, often materially assist in diagnosis. With the essential clinical phenomena as a basis, doubt can often be changed to certainty by the employment of radiography, blood tests, urinary analyses, and bacteriological research, but I know of nothing more confusing than a radiogram, unless it be the report of a radiographer who attempts to make a diagnosis without accurate clinical data. I believe there is entirely too much hastily conceived and misapplied treatment. The essential ingredient of any therapeutic measure should be skilful diagnosis. This is accomplished only by devoting time and discernment to a skilful weighing of all obtainable facts.

DISCUSSION.

Dr. R. Tait McKenzie: To the various factors bearing upon deformities I would add, the design of clothing, and the construction of furniture. I shall confine my remarks, however, to the subject of postural deformities that are non-tubercular. As soon as we assume the upright position the pressure of the whole body weight coming upon the feet gives a tendency to their eversion, thus threatening deformity of the arch. The next point at which the bony structure may yield is at the knee, and from the slightly bowed leg there may be the condition of knock-knee. With an exaggeration of the curve which may occur at the lower part of the back there is a compensating curve in the upper part of the back. The ribs are carried downward, the chest is flattened and the abdomen protrudes, giving the typical condition of bad posture with the consequent disarrangement of the contents of the upper zone of the abdomen and the long train of symptoms familiar to all. Many faulty positions are acquired in the school room where the child has to sit still for long periods of time. City conditions are also at fault, for the child has not the opportunity for play which gives the best development. This, however, is being corrected by the establishment of playgrounds. Occupation is another factor in etiology. In many occupations we are unable properly to use our muscular system. It is not surprising that we find motormen and hospital nurses flat-footed. The underlying principle in all these deformities is fatigue in some form. Much can be done in the schoolroom by breaking up the long periods of study by short periods of rest and exercise, and by tests in posture. It has been found that one of the chief causes of the stooping of children has been in the structure of the clothing by which a constant pressure is felt on the back of the neck. This is remedied by changing the cut of the garment.

Dr. James K. Young: Three sources of infection in tubercular children are (1) cows' milk; (2) nurses and attendants; (3) infected rooms. The faucial tonsils seem to be the chief channels of infection. My clinical observation leads me to believe that suppuration does not so frequently occur in these instances of bovine infection as in the human. The importance of the source of infection being that of nurses and attendants has so impressed Mr. Thomas A. Edison that he has personally supervised a photo-play entitled the "Temple of Moloch," which has for its climax the discovery of the infection of two children by a tubercular nursemaid.

The photo-play is to be used by the Tuberculosis Commission in its warfare against the white plague.

The occupations which seem to be most suitable are not always the best adapted to or selected by the deformed person. Music, especially orchestral, wireless telegraphy and the telephone have afforded valuable means of livelihood. School teaching is a suitable occupation for those in whom the tubercular process has been arrested.

DR. CORNELL, closing: I have learned much tonight and shall urge upon our school authorities the importance of vocational training of crippled children and of the provision of ample sunlight in our school buildings. The psychology of crippling deformity is an aspect of the problem totally different from that of the mechanical treatment and claims our best endeavor. I would especially plead for treatment by the medical profession of crippling deformities from the preventive standpoint.

DR. TAYLOR, closing: The other papers have brought out much of importance and of practical suggestion. It is gratifying to know of the advance in postural work outlined by Dr. McKenzie. The subject of occupations for cripples I am especially interested in. I would not be misunderstood regarding the value of the x-ray. What I said was that in the early cases the x-ray frequently showed nothing. I do not wish to be understood as believing that you cannot get good results by traction, but, as I have said, if you will handle your case with fixation, properly applied, you will have little need of traction, and a little motion is worse than a stiff joint.

◆

Book Reviews.

Practical Therapeutics. By DANIEL M. HOYT, M.D., formerly Instructor in Therapeutics, University of Pennsylvania, etc. Second edition, revised and rewritten. pp. 426. St. Louis: C. V. Mosby Company. 1914.

This volume includes in its discussion materia medica and prescription writing, together with a description of the most important new and non-official remedies accepted by the Council on Pharmacy and Chemistry of the American Medical Association. This second edition has been revised, as is peculiarly necessary in dealing with the general subject of drug therapeutics. It has been improved in various ways, as, for example, through the brief description of vaccine therapy, and practical suggestions regarding office dispensing. The subject matter is conveniently arranged under general headings descriptive of the use of various therapeutic agents. Throughout it is eminently practical, clearly written, and admirably arranged for reference. An extensive appendix of upwards of a hundred pages describes new and non-official remedies, which are coming to take an important place in therapeutics. An excellent index of drugs, which is really much more than an index in the information it gives, concludes this generally satisfactory volume.

Diseases of the Skin, Including the Acute Eruptive Fevers. By FRANK CROZER KNOWLES, M.D., Instructor in Dermatology in the University of Pennsylvania; Clinical Professor of Dermatology, Women's Medical College of Pennsylvania. Octavo, 546 pages, with 199 engravings and 14 plates. Philadelphia and New York: Lea and Febiger. 1914.

This volume adds one more to the many published in recent years, devoted to the convenience of the student and general practitioner of medicine. In it the writer has tried to cover all of the eruptions that come on the skin and the adjacent mucous membranes, and includes the exanthemata. In the domain of therapeutics the author confines his recommendations chiefly to remedies that have been successful in his own hands, a wise resolve in a book addressed solely to students and general practitioners. Syphilis, pellagra, and tropical diseases are dealt with at greater or lesser length. The illustrations are numerous and remarkably good. Dr. Knowles is to be congratulated on producing a praiseworthy book in a field already pretty well occupied by successful predecessors.

A Text-Book of Pathology. With an Introductory Section on Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By FRANCIS DELAFIELD, M.D., and T. MITCHELL PRUDDEN, M.D. Revised with the coöperation of FRANCIS CARTER Wood, M.D. Tenth edition. Completely revised. 8vo., 1144 pages, illustrated by 14 full-page plates in black and colors, and by 694 line and half-tone cuts. New York: Willliam Wood and Company. 1914.

This edition is slightly improved over previous editions. It is possible in this, as in any text-book, to point out numerous omissions, some errors and instances of undue emphasis placed upon certain subjects. The text-book has been for many years one of the standards in pathology and it has more than held its own with succeeding editions. This edition is brought thoroughly up to date and considerably improved by an increased number of references and illustrations. The book as a whole is so excellent that it does not seem fair in a short review to call attention to the few minor deficiencies which can be found.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, JANUARY 28, 1915.

EDITORS.

ROBERT M. GREEN, M.D., *Editor-in-Chief.*
WALTER L. BURRAGE, M.D. } *For the Massachusetts Medical Society.*
FREDERICK T. LORD, M.D. }

COMMITTEE OF CONSULTING EDITORS.

WALTER B. CANNON, M.D.
HARVEY CUSHING, M.D.
DAVID L. EDSALL, M.D.
REID HUNT, M.D.
ROGER I. LEE, M.D.
ALLAN J. MCLAUGHLIN, M.D.
ROBERT B. OSGOOD, M.D.
MILTON J. ROSENAU, M.D.
EDWARD C. STREETER, M.D.
E. W. TAYLOR, M.D.

ADVISORY COMMITTEE.

EDWARD C. STREETER, M.D., Boston, *Chairman.*
WALTER P. BOWERS, M.D., Clinton.
HOMER GAGE, M.D., Worcester.
JOEL E. GOLDTHWAIT, M.D., Boston.
LYMAN A. JONES, M.D., North Adams.
HUGH WILLIAMS, M.D., Boston.
ALFRED WORCESTER, M.D., Waltham.
ROBERT B. OSGOOD, M.D., Boston, *Secretary.*

ERNEST GREGORY, *Manager.* W. M. LEONARD, *Consulting Manager.*

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 *Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, *Manager,*

126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

BIOLOGIC ASPECTS OF EARLY MARRIAGE.

In the July, 1914, issue of the *Journal of Heredity,* the official organ of the American Genetic Association, was published a brief paper by Casper L. Redfield, of Chicago, on the "Results of Early Marriage," raising the question whether it leads to the production of desirable children and offering a reward of $200 for the reporting of human cases "where rapid breeding led to good results from an intellectual point of view." The reward, which was deposited with the Association in April, 1914, has recently been returned to the donor, no one having produced evidence of the kind required.

In an analysis of a large amount of statistics, Mr. Redfield has been able to find no person of eminence produced among families in which there are more than three generations in a century. In his conclusions from this, he says:—

> "If the majority of people are produced by breeding faster than three generations to the century, and yet no very eminent person was ever produced within that range, the conclusion is obvious. In 33 states the legal age of marriages ranges from 15 to 19 years for boys, and from 13 to 17 for girls. In the same states there are many marriages at less than legal age which are considered valid unless objection be made. Such early marriages result in rapid generations, and continuous rapid generations lead to the production of mental and moral defectives."

In short, Mr. Redfield believes that the optimum conditions of human breeding would be reached by the production of the majority of children from parents of an average of not less than 33 1/3 years.

It seems that these conclusions rest on the basis of a possible common fallacy which underlies many eugenic and other arguments,—namely, the mistaking of cause for effect. It is not that early marriages, resulting in rapid generations, lead to the production of mental and moral defectives; but that individuals of the type tending to produce defectives are more likely to marry early, hastily, and unwisely than the more discreet individuals of higher type, who postpone marriage until they can achieve better pecuniary environmental conditions. Such conditions, in turn, often react favorably on the offspring, giving even the weaker children of older parents educational and hygienic advantages which enable them to surpass the physically stronger children of younger but poorer parents. Could similar advantages have surrounded the parents of higher type during an early marriage their output in quantity and quality of desirable children might have been much greater. In other words, it is not late breeding which secures intellectual or other superiority, but the accrued circumstantial advantages of environment which oftener surround late than early marriages.

Even if it be true that there are no persons of intellectual eminence among the offspring of families breeding faster than at the rate of three generations to the century, this does not prove that the breeding of good stock from younger marriages is not desirable. After all, the bulk of the world's work is and always must be done by persons not of intellectual eminence. Such people are needed only in moderate numbers as leaders. What is fully as essential, and what we are in far greater danger of losing, is a rank and file of humanity made of the most healthy, vigorous physical fibre. Such individuals are most likely to be bred from parents during the decade of greatest reproductive energy, from 20 to 30. Desirable parents marrying at 20 and producing their children during these years would have an average age of 25 at the birth of desirable children, or four generations in a century. That this is not now the case is because of the economic conditions, which do not deter the rash persons of undesirable stock, but do deter the thoughtful individuals of higher type, from early marriage.

As a matter of fact, there is here a conflict, as in many other human relations, between two types or ideals of civilization, the racial and the individual. Doubtless the interests and advantages of the individual are best subserved by late marriage, leading to fewer offspring surrounded by a superior environment. This process, as the experience of history has shown, undoubtedly leads to the production of the highest individual types, but unfortunately it ultimately leads to family and race extinction. The racial ideal, on the other hand, aims at the production of the greatest number of individuals of a good type, though not of the highest, with early marriages surrounded by sufficiently good environment to ensure proper development and perpetuation of the type. Such a method inevitably involves sacrifice of individual advantages for the sake of guaranteeing race survival.

Probably the biologic desideratum for any race, or for the human family as a whole, is not slow, late breeding, which is only Malthusianism under another form, but the maintenance of a majority of physically superior individuals bred under good environment from parents during the third decade of life. Gradual improvement of this stock could be effected by encouraging early marriage of desirable parents, which would increase physical race efficiency not only directly, but indirectly by lessening the amount of venereal disease among the higher types. Intellectual leaders are bound always to occur as "sports" under any method of breeding. Of course such discussion is academic rather than practical, since these questions will ultimately be settled not by conscious but by spontaneous evolution. That human type, however, will probably in the long run survive and dominate which by means of early marriage can most effectively combine the racial with the individualistic ideal in civilization.

THE TREATMENT OF RUPTURED TUBAL PREGNANCY.

In another column of this issue of the JOURNAL we publish a valuable study by Dr. Young, based on an analysis of sixty-two cases of ruptured tubal pregnancy occurring in the gynecologic service of the Boston City Hospital since 1902. The chief and most important conclusion derived by the author from this study is the undesirability of immediate operation in every case, a conclusion in which we most heartily concur with his judgment. Not many years ago it was the teaching of practically all surgical clinicians that every case of ruptured tubal pregnancy should be operated upon at sight, and doubtless many lives have been sacrificed to this well-intended but misplaced surgical zeal. As a matter of fact, it is exceedingly seldom that a patient dies of the first, or even the second hemorrhage following ruptured tubal pregnancy. It is only repeated hemorrhages, or injudicious intervention, which give the *coup de grâce* in most cases; and in not a few, as is well known, nature may even effect a spontaneous cure. The desirable time for operation in tubal rupture is not when the patient reaches the hospital exhausted by her journey and perhaps just at the close of a fresh hemorrhage, but after several hours of rest and warmth in bed, with judicious stimulation, when the operation can be done upon a patient with improving general condition, rather than at the moment of maximum depression. These facts were recognized by Robb in 1908 and their truth is reëxemplified with additional force in the present article by Dr. Young. There are, of course, cases in which immediate operation is desirable in the presence of signs of obviously progressive hemorrhage. These, however, are the desperate few; the majority benefit by a course of more moderate conservatism.

As to the type of operation to be preferred opinions differ. It seems, however, that with a clear diagnosis, the abdominal route is almost invariably to be preferred. Operation from below is an operation in the dark, without positively reliable control of hemorrhage and without opportunity to inspect and cleanse the peritoneal cavity.

In the differential diagnosis of tubal abortion from tubal rupture there are a few signs of value. In tubal abortion (the ovum being lodged near the fimbriated extremity of the tube), there is relatively little or no concomitant uterine enlargement, the hemorrhage is less profuse and the abdominal symptoms less urgent than in tubal rupture. In tubal rupture not only are the hemorrhage and abdominal distress greater, but, the ovum being lodged nearer the proximal extremity of the tube, there is usually uterine enlargement corresponding with the duration of the pregnancy.

In the present series eight of the fifteen fatal cases are said to have had shock as a cause of death. Doubtless in some of these the shock was due primarily to injudiciously precipitate operation at a time of minimum resistance immediately after a hemorrhage. In some, however, it is probable that life might have been saved by the employment of transfusion, a procedure which has been applied to only a few of this series of cases. We cannot agree with Dr. Young in his attitude towards transfusion. Given a judicious selection of the time for operation, the recovery or death of a patient with ruptured tubal pregnancy will depend upon the amount of blood lost, the operative shock being in itself small and approximately the same in all cases. Where the hemorrhage has been so great as to portend death, a transfusion promptly done, under the anesthesia of the original operation, as soon as the source of bleeding has been controlled, will generally turn the scale, and, by replacing a considerable part of the blood lost, makes it possible for the patient to live. Salt solution, which merely replaces the volume of the circulation, is no adequate substitute for whole blood. It would seem that ruptured tubal pregnancy is preëminently a condition in which the beneficent procedure of transfusion is a most valuable life-saving measure. It is by no means indicated as a routine procedure, but when employed in critical, borderline, or even moderately exsanguinated cases, tends to expedite convalescence, and to lessen shock and liability to sepsis, even if it does not actually save a patient who otherwise would have died.

With judiciously conservative selection of the time for operation, with the employment of the abdominal route, and with the performance of transfusion in all cases of whose recovery any reasonable doubt is entertained, the mortality of ruptured tubal pregnancy should be diminished to an irreducible minimum.

NEW YORK'S NEW SANITARY CODE.

FOR some time past it has been felt by the New York City health department that a new sanitary code should be enacted, for, as Commissioner Goldwater expresses it, the code which has been in force for many years has been patched and padded from time to time, until it lacked continuity, coherence and clearness. Accordingly, an entirely new code has been adopted by the board of health, and this, while re-embodying the provisions of the old in simplified terms and in more logical arrangement, includes twenty new sections which are in large measure the result of recent observations and investigation, and which, it is believed, will effect a wider application of the principles of sanitation.

It has been asserted more than once that important legislative powers have been unwarrantedly seized by the small group of officials constituting the board of health, but Dr. Goldwater explains that these powers, and the responsibilities attending them, have not been seized at all, but, on the contrary, have been thrust upon the board by law, and been most reluctantly assumed. Always conscious of its grave responsibility, it has, in exercising the legislative powers conferred upon it, endeavored to fortify its position with authoritative opinion and advice, and for many years it has been the practice of the department, when considering new legislation to correspond with the advance of medical science, to call into counsel the leading members of the profession and to secure a consensus of expert opinion before taking action. In order to systematize consultations of this kind there was established some time since a medical advisory board, and among its present members are such men as Dr. H. M. Biggs, state commissioner of health, and Drs. A. Jacobi, Simon Flexner, William M. Polk, an T. Mitchel Prudden. It has been the aim of the present head of the department to make its legislative enactments an expression, not of the will of the three men composing the board of health, but of the civic ideals and the conscious will of the people themselves. Last year, for the first time, the department asked the systematic coöperation and counsel of laymen, as well as of medical men, and early in 1914 an advisory council consisting of 150 representative men and women was organized. One of the chief objects in establishing such a body was to bring into relation with the department representatives of those trades and interests which, for one reason or another, fall under its supervision and are in daily contact with it; for it was felt that regulations affecting any industry or occupation should not be adopted except with the cognizance and under the advice of representatives of those regulated. The members of this new advisory council, as well as of the medical advisory board, have therefore participated in the revision of the sanitary code; so that, while the code represents finally the judgment of the three officials who voted upon it, it is based upon the research, experience and deliberation of a large body of qualified and interested citizens who were called to consider it carefully, section by section, before it was presented to the board of health for enactment. The death-rate in the city in 1914 was 13.4, the lowest yet recorded, and it is reasonable to allow that this excellent showing was due in some measure to the enforcement of the existing sanitary regulations. It is hoped by the department that by means of the additions which have now been made to these a still lower rate may be reached.

The new sanitary code is composed of eighteen articles, the first being devoted to definitions, while in the succeeding ones the contents are grouped under headings alphabetically arranged. For instance, the subject of one article is animals, and in this there are sections relating to the reporting of glanders and other contagious animal diseases, to the destruction of diseased animals, and to numerous other matters connected with animals, alive and dead. Some of the additions to the code are of special interest. With a view to the prevention of epidemics resulting from food contamination, it is now required that physicians, in reporting cases of typhoid, diphtheria, scarlet fever, epidemic dysentery, and septic sore throat, must state whether the patient is engaged in the handling of milk or other dairy products or is employed as a cook, kitchen helper or waiter. A new section prohibits the distribution from door to door of so-called samples of medicine intended for internal use, a method of advertising which has been quite extensively used to increase the sale of harmful nostrums, and particularly of those containing habit-forming drugs. In regard to the sale of patent and proprietary medicines it is prescribed that the ingredients entering into their composition shall be mentioned on the package or, as an alternative, that the names of such ingredients shall be filed with the health department. The employment in bakeries of persons suffering from communicable diseases is prohibited by a state law, and under the new code this rule is extended to include persons employed in all places where food or drink is "prepared, cooked, mixed, exposed, bottled, handled, manufactured, offered for sale, or sold." Another section specifies that in the manufacturing, handling and sorting of cigars and cigarettes no person engaged in such work shall at any time touch with the lips, teeth or tongue any cigar, cigarette or tobacco to be offered for sale, and manufacturers are required to post in their establishments warnings against such practices. In factories and other places where, in the regular course of the business, dust, gases, fumes, etc., are generated or released in quantities constituting a menace to health, efficient suction devices must be provided. The owner, lessee, or other person having the management of any salt marsh land, inland swamp, sunken lot, abandoned excavation, or any place on or in which water becomes stagnant, and may thus lead to the breeding of mosquitoes, is required to drain or fill in the place, or to employ such other method as will at all times prevent the breeding of mosquitoes there. The private hospitals in the city which are established and maintained by benevolent corporations, are invariably chartered by the state, but in addition to these there have been operated an increasing number of small private hospitals, not in receipt of public funds, which are not charitable institutions, and which do not come under inspection by the agents of the State Board of Charities. Conditions having arisen which pointed clearly to the necessity for the control and regulation of establishments of this kind, it was decided by the board of health to take action in the matter, and, accordingly, in the new code it is provided that hereafter no person or corporation other than those specifically authorized by law shall "conduct or maintain any private hospital or institution wherein human beings may be treated or cared for by physicians or midwives without a permit therefor issued by the board of health."

ADMISSION TO THE RUTLAND STATE SANATORIUM.

THE Rutland State Sanatorium ever since its opening in 1898, has been reserved, according to the ruling of the board of trustees, for early and favorable cases of pulmonary tuberculosis. Prior to 1910, when the present board of trustees took charge, applicants for admission to this sanatorium had first to be examined by a special Rutland examiner, who passed upon the patient's fitness as a patient for this institution. There were ten or twelve such examiners scattered throughout the state. In addition to passing this examination, no patient could be admitted unless he or his relatives and friends could provide the necessary $4.00 a week.

Under this system the average number of really incipient cases at Rutland was about 27-28%, occasionally reaching as high as 32-33% of the whole. The remaining patients were in the advanced or moderately advanced stages of the disease. When the present board of trustees took charge of the Rutland Sanatorium, the old system of special examiners was discontinued and an elaborate application blank was prepared, which any registered physician in this state could fill out and by this means make application for admission to Rutland for his patients. The payment of $4.00 a week as an essential requirement for admission was also done away with. As a natural result of this change in the method of admission to Rutland, at first the number of incipient cases admitted fell to 18-20%. Gradually, however, as the medical profession became more proficient in the early diagnosis of tuberculosis, the percentage of incipient cases has risen so that now the proportion is about the same or better under the present system than it was formerly under the old system of special examiners. The fact still remains, however, that at present, as in the past, two-thirds or more of the patients at Rutland, an institution supposed to be reserved for the early and favorable cases of tuberculosis, are in the moderately advanced or advanced stages; likewise the unsatisfactory condition continues, in that really favorable patients, especially among men, must wait two to three months and sometimes four months before their names are reached, for admission to Rutland.

In order to improve this state of affairs and to allow of the admittance of early cases without this long delay, the board of trustees at its last meeting, held Jan. 5, 1915, passed the following vote:—

Voted, That whereas the Rutland State Sanatorium is reserved for early and favorable cases of pulmonary tuberculosis, in future all patients admitted to the Rutland State Sanatorium be placed on trial for a period of one month in order to ascertain their eligibility for this institution. If at the end of this period of one month patients are found not to be suitable cases for the Rutland Sanatorium, they are to be given opportunity of transfer to one of the other state sanatoria and their names placed at the head of the list for this purpose.

It is not believed that this vote will cause any hardship to any patient. Arrangements will be made to transfer patients, who after their period of probation are found to be unsuitable for the purposes of the Rutland Sanatorium, to some other sanatorium or to a local hospital. It will result, it is to be hoped, in shortening the waiting list and in reducing to a reasonable time the period of waiting which incipient and favorable cases of tuberculosis now have to undergo before admittance. It will also result, it is hoped, in making Rutland an institution in fact, as in name, for incipient consumptives, while in addition it ought greatly to improve the atmosphere and morale of the sanatorium. It will doubtless cause considerable discontent and mental anguish among those patients who after a month's time are found not suitable for Rutland and who have to go elsewhere. It will likewise cause some dissatisfaction among physicians who may not agree with the decision reached at the sanatorium. It is hoped, by making this statement and by explaining the reasons for this change and the causes which have made it necessary, that the medical profession of the state will see the wisdom therefor and will coöperate with this board in making the change successful and beneficial.

◆

CONTAMINATION OF FOOD WITH FECAL MATTER.

All persons who have had active experience in the effort to improve sanitary conditions in backward rural districts agree that one of the most difficult problems is to convince the people that their water supplies are in reality not so pure as they seem to the unaided senses. If water is clear, cold and plentiful, and devoid of bad taste or odor, the average person, uneducated in the refined methods of modern analysis, is loth to believe that it can carry within its sparkling depths anything so dangerous as the germs of disease. In fact, it has been practically known for a long time that a considerable portion of certain rural populations consumes by accident more or less human excrement, but in order to convince the people themselves that such is the case, some incontrovertible scientific proof was necessary. Believing that such actual demonstration would have a high educative value, Professor Stiles of the Hygienic Laboratory has succeeded in evolving a method for this purpose.*

The fundamental principle underlying the method consists in the fact that certain animal parasites, namely the entamoeba coli, lamblia, trichomonas, ascaris lumbricoides, and trichuris trichiura are found in the intestines of man only, not being found in the alimentary tract of any animal and having no free living state outside the human intestines, the transmission from person to person occurring in either spore or egg form. Therefore any person who has in his intestines one of these parasites must necessarily have obtained it by swallowing human excrement. The Division of Zoölogy of the Public Health Service applied this test to 2372 persons taken at random in twelve different localities in three states. They found that 425 out of the 2372 had one or more of these strictly human parasites in their stools, thus proving by zoölogical methods alone that 17.9% of the persons examined had unwittingly partaken of food or drink contaminated with human feces.

The impartation of such information to a community grown lax in its personal sanitation and lukewarm to the efforts of health officers to better conditions, should certainly have a salutary effect. Indeed, it would seem that people who failed to be awakened by a knowledge of this kind were hopelessly asleep and incapable of any kind of progress.

MEDICAL NOTES.

American Society for the Control of Cancer.—A meeting of the American Society for the Control of Cancer was held in Boston on Jan. 14, with addresses by Dr. J. Collins Warren, Dr. Edward Reynolds, and Prof. Dr. W. T. Sedgwick, of the Massachusetts Institute of Technology.

The Epizoötic of Foot and Mouth Disease.—With the gradual subsidence of the epizoötic of foot and mouth infection, there is a gradual removal of the national quarantine regulations by means of which the disease has been brought under control. On January 13, the quarantine of livestock was suspended in many counties of Indiana, Kentucky and New York. In Massachusetts movement of livestock in non-infected areas is now permitted.

Society of American Bacteriologists.—The Society of American Bacteriologists held its annual meeting in Philadelphia at the Laboratory of Hygiene, University of Pennsylvania, Dec. 29, 30 and 31, 1914.

The following officers were elected: President, D. H. Bergey, M.D.; vice-president, John Weinzirl, M.D.; secretary-treasurer, A. Parker Hitchens, M.D.; council, K. F. Kellerman, M.D., W. A. Stocking, Jr., M.D., R. E. Buchanan, M.D., R. J Conn, M.D. Delegate to A. A. A. S., M. J. Rosenau, M.D.

The next regular meeting of the society will be held in Urbana, Illinois. The chairman of the local committee is Professor H. A. Harding. A special meeting of the society will be held in San Francisco during the summer.

Pellagra and Poliomyelitis in Mississippi.—During the month of November, 1914, 603 new cases of pellagra and nine of poliomyelitis were reported in the state of Mississippi.

Tuberculosis in North Carolina.—In the weekly report of the United States Public Health Service for Jan. 15, is reprinted the following extract from the message of Governor Craig to the North Carolina General Assembly on Jan. 7. It evidences well his appreciation of the seriousness of the problem of state control of tuberculosis and indicates some of the measures which it is expected may be taken in North Carolina to meet it:—

"The problem of dealing with tuberculosis is most serious. In North Carolina it has been ascertained that 18,000 people are the victims of this disease. Many may have it of whom we do not know. It is an ever-present plague that stalks abroad at noonday, and one-seventh of all the deaths in the state are from this dreaded disease. The state sanatorium was established in response to the demand that something must be done for the afflicted, and to stop the ravages of the plague. In my opinion this institution, with its present scope and efficiency, is utterly incapable of dealing effectively with the situation. As an institution for the purpose of educating people to care for themselves and disseminating knowledge of the disease, it cannot be as effective as could a bureau established for the purpose of sending literature to every person in the state known to be afflicted. Such literature could present the situation more intelligently to the people and with more efficacy than could be done by a few patients who are fortunate enough to secure admission to the small establishment at Sanatorium. There are now about 90 patients in this institution. It is most humanely and most ably managed. Yet it is altogether inadequate to deal with this stupendous proposition that so vitally affects the people. It has done good in individual instances, but there are thousands in the state who cannot gain admittance, and who will desire admittance when its efficiency is recognized. This institution can never care for those entitled to admission. On the present plan, the whole revenue of the state could not meet the demand. *It is one of the highest obligations of the state to deal with this disease, to do all possible to prevent it, and to cure those who have it.* I hope that this general assembly can work out a practical method that will be effective."

---

* Annual Report of the Surgeon General, U. S. Public Health Service, 1914, p. 22.

ASSOCIATION OF LIFE INSURANCE PRESIDENTS.—The recently published proceedings of the eighth annual meeting of the Association of Life Insurance Presidents, held in New York City on Dec. 10 and 11, 1914, includes several papers on the relations of life insurance to questions of public health. Among these may be mentioned one by Mr. Rudolph Hering on the "Relation of Sanitary Engineering to Public Health," and one by Mr. Arthur Hunter entitled "Can Insurance Experience be Applied to Lengthen Life?" Mr. Hering summarizes the work and methods of sanitary engineering under six groups, dealing respectively with water supply, air supply, street cleaning, river cleaning, refuse removal and sewerage removal. In all these he concludes that public works relating to sanitary engineering have reached a point of development based on sufficient knowledge and experience to present satisfactory solutions in practically all cases. Mr. Hunter believes emphatically that insurance experience can successfully be applied to lengthen life. The statistics gathered by insurance companies are particularly of value from the information which they afford relative to hazardous occupations, tuberculous family history, history of important infections such as rheumatism, typhoid, or syphilis, cardiac and renal physical defects, addiction to alcohol and excessive emaciation or obesity.

EUROPEAN WAR NOTES.—On Jan. 13 a Japanese Red Cross unit sailed from New York aboard the *Megantic* for Southampton, England, where it will be stationed at the Netley Royal British Naval and Military Hospital, to which it has been assigned for duty. The unit consists of Surgeon-General Suzuki, Dr. T. Oshima, and 21 nurses.

On Jan. 16 a cargo of sera, antitoxins, adhesive plaster, bandages, and 1500 pounds of chloroform was shipped to London from the American Red Cross at New York aboard the *Minnetonka.*

The American Field Ambulance Association, Incorporated, has been formed by Charles E. Cotting of Boston, Robert Walcott of Cambridge, Frank Cheney, Jr., of South Manchester, Conn., Theodore S. Farrelly of New York City, and Samuel Thorne, Jr., of Rye, N. Y. The objects of the corporation are to operate a field ambulance service in France, Belgium and elsewhere, to relieve the sick and wounded, and perform such other work as may seem necessary, and to acquire such property as these purposes of the corporation shall require.

The principal office of the corporation is at 19 Cedar Street, New York City. The organization is neutral and is operating subject to the rules of the Geneva Convention, which entitles its members to wear the red cross. For financial support it depends entirely on the generosity of Americans, and since the need of funds to maintain equipment and support the personnel is urgent at present, contributions may be sent to any of the incorporators or to Samuel Thorne, Jr., treasurer, 19 Cedar Street, New York City.

An unauthenticated report in the public press states that Dr. Alexis Carrel, at his hospital in Lyons, France, has succeeded in grafting an entire forearm and elbow-joint from a moribund to a wounded patient. If this be true, it is not only a great personal triumph for Dr. Carrel, but a demonstration of the value of experimental surgical research.

On Jan. 23 the total of the New York Belgian relief fund amounted to $862,573.52; the New York Red Cross fund to $444,312.76; the New York Jewish relief fund to $320,097.36; the American Ambulance Hospital fund to $312,397.15; the Prince of Wales fund to $105,763.88; and the American Polish relief fund to $16,851.37.

On Jan. 24 the total of the New England Belgian relief fund amounted to $179,287.17; the Massachusetts Red Cross fund to $103,297.66; the Boston branch of the American Ambulance Hospital fund to $51,636.45; the New England Jewish relief fund to $27,273.35; and the Boston Polish relief fund to $14,154.97.

MORTALITY FOR WEEK ENDING JANUARY 15, 1915.—The Department of Health yesterday gave out the following figures concerning the mortality during the week ending January 16: The increase in the mortality from acute bronchitis, lobar pneumonia and broncho-pneumonia, to which attention was called in last week's bulletin, continued during the past week, the number of deaths totalling 311 as against 246 during the corresponding week in 1914. The increased mortality from these causes was more than offset by the decreased mortality from certain other causes, especially measles, scarlet fever, pulmonary tuberculosis, Bright's disease and nephritis and violence, so that the death-rate from all causes combined was 14.49 per 1000 of the population, against 14.86, a decrease of .37 of a point, which is equivalent to a relative decrease of 41 deaths in the week's mortality.

The increase in the mortality during the past week was chiefly among children under five years of age, and especially so among children under one year of age, there being 51 more deaths reported at this latter age group. The mortality at the other age groups was somewhat lower than in the corresponding week of 1914.

The death-rate for the first three weeks of this year was 14.73 per 1000 of the population, as against 14.62 during the corresponding period in 1914, an increase of .11 of a point.

HARVEY LECTURE.—The seventh in the current series of lectures before the Harvey Society will be delivered on Saturday evening of this week, Jan. 30, at the New York Academy of Medicine, by Professor Hans Zinsser, of Columbia University, on "The More Recent Developments in the Study of Anaphylactic Phenomena."

BEQUEST TO THE ROCKEFELLER INSTITUTE.—The will of the late Henry Rutherford, recently admitted to probate, contains a bequest of $200,000 to the Rockefeller Institute for cancer research.

BOSTON AND NEW ENGLAND.

LAWRENCE MATERNITY ASSOCIATION. — The Lawrence (Mass.) Maternity Association has been formed to aid those women whose circumstances do not permit the employment of regular medical attendance with nursing, at time of childbirth. The central office at the Lawrence General Hospital will be open at all hours, day and night. Patients may register, and the services of physicians and nurse may be secured. It is urged that registration be made at least three months before expected labor, thus giving the patient the benefit of the nurse's visit beforehand. Care and instruction will be given from time to time by the physician and nurse, and the patient will receive daily visits after delivery as ordered by physician. A moderate fee will be charged for services, which will be explained at time of registration.

AESCULAPIAN CLUB OF BOSTON.—The midwinter meeting of the Aesculapian Club of Boston was held at the Harvard Club on Saturday evening, Jan. 9, being preceded by a dinner of the club at which were 103 members and the guests, Dr. Oscar Dowling, president of the Louisiana Board of Health, and Mr. Norman Hapgood, editor of *Harper's Weekly*. The meeting was at 9 p.m., there being present, beside the members, about 125 guests. The first speaker, Dr. Dowling, gave a very interesting talk, narrating in some detail the history of his board from early days, its present trials and successes, its tour of the state with cars of exhibition and instruction, and its methods and results in cleaning up various objectionable towns and places. Mr. Hapgood's talk was general and on the whole well chosen and complimentary to the profession. He touched on the failure of segregation in the regulation of prostitution, on the magnitude of the question of prohibition, on the dissatisfaction of the public in regard to the "alienist" testimony of experts at trials, and on various other matters.

ANNUAL MEETING BOSTON MEDICAL LIBRARY. —At the annual meeting of the Boston Medical Library, held Jan. 12, 1915, the former officers were reëlected: Dr. John W. Cummin was elected to the committee on library and finance, in place of Dr. Morton Prince, who retired after sixteen years service; Dr. Reginald Fitz became a member of the committee on medical and social meetings; Dr. Daniel F. Mahoney a member of the committee on membership and elections; and Dr. Walter Channing and Dr. John W. Bartol were elected vice-presidents. Dr. Francis W. Peabody gave an interesting talk, illustrated by the stereopticon, on "Western Medicine in China." According to the report of the librarian the library now contains 82,275 books and 57,035 pamphlets and use of its facilities has been made by 14,105 readers during the past library year, two-thirds of these being medical students and the public. The number of readers has shown a progressive increase from year to year. The total membership of the library is now 742, a gain of 43 over that of last year.

CASES OF INFECTIOUS DISEASES reported to the Boston Board of Health for the week ending Jan. 19, 1915: Diphtheria, 63, of which 2 were non-residents; scarlatina, 65, of which 5 were non-residents; typhoid fever, 3; measles, 64; tuberculosis, 45, of which 2 were non-residents. The death-rate of the reported deaths for the week was 16.40.

◆

Massachusetts Medical Society

FRANKLIN DISTRICT MEDICAL SOCIETY.—The Franklin District Medical Society held a meeting at the rooms of the Greenfield Club, Greenfield, on Jan. 12, 1915, the program being entitled "Health Day." Dr. J. E. Urquhart of Ashfield, president, was in the chair, and Dr. G. P.

Twitchell of Greenfield acted as secretary. Dr. William C. Hanson read a paper on "The Functions of the State Department of Health"; Dr. Francis G. Curtis, chairman of the board of health of Newton, read on "The Benefit to the Community of the Health Office"; Mrs. William Lowell Putnam of Boston on "The Benefit to the Producer of Clean Milk." The papers merited the interesting discussion which followed, bringing out the needs of better medical education and standards in the country districts. The following took part in the discussion: Dr. J. S. Hitchcock, state inspector of health for the Northampton district, Dr. N. P. Wood and Mr. Moody of Northfield, Dr. P. W. Goldsbury of Warwick, Dr. Urquhart of Ashfield, Drs. B. P. Croft, G. P. Twitchell and F. W. Donahue of Greenfield, Dr. H. A. Suitor of South Deerfield and Messrs. Covell of Shelburne and George Moore of Greenfield.

Current Literature

MEDICAL RECORD.

JANUARY 2, 1915

1. FISHBERG, M. *Artificial Pneumothorax.*
2. BRICKNER, W. M. *A Simple, Easily Regulable Method of Applying Abduction in the Treatment of Shoulder Disability.*
3. PETERS, L. S. *Tuberculin in Pulmonary Tuberculosis.*
4. BECHET, P. E. *Diseases of the Skin in Pregnancy.*
5. BARNES, F. H. *Medical Inspection of Schools in Connecticut.*
6. JOHNSTON, J. C. *A Suggestion in Cases of Late Operation for Intestinal Obstruction.*
7. PAGE, B. W. *Etiology of Pellagra.*

JANUARY 9, 1915.

1. *LYDSTON, G. F. *A Unique Case of Syphilis of the Cranium and Spine; with Remarks on Syphilitic Bone Dystrophy.*
2. GLEASON, W. S. *Obscure Causes of Disease.*
3. STARKEY, F. R. *Intestinal Stasis.*
4. BANDLER, S. W. *The Use of Pituitary Extract in Obstetric Practice; with Some Critical Observations on "Twilight Sleep."*
5. FRAZER, T. *The Significance of the von Pirquet Test.*
6. VON WEDEKIND, L. L. *The General Use of Distilled Water, Thereby Securing the Elimination of Toxins Leading to Arterial Changes, and the Elimination of WaterBorne Disease.*
7. SCHLESINGER, M. F. *Reasons for Discrepancies in Reports on the Wassermann Reaction, from a Technician's Side.*
8. PETTY, O. H., *and* PITFIELD, R. L. *Enormous Tumor of the Uterus.*
9. HENKIN, A. L. *Pemphigus Foliaceus Neonatorum.*

1. Lydston reports a case of late syphilis of the cranium and spine without symptoms referable to the bony structures involved, and without disturbance of brain or nerve function. Such lesions, he says, are due not to pressure or corrosion but to perversion of nutrition resulting from luetic toxemia which affects especially the sympathetic system. In cases of this sort the bones of the face are more often selected than those of the cranium and spine, the tissues supplied by the fifth nerve being particularly susceptible. There may or may not be gummatous infiltration elsewhere. The treatment is necesarily surgical as well as specific. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JANUARY 9, 1915.

1. *WILLIAMS, J. W. *The Limitations and Possibilities of Prenatal Care, Based on the Study of Seven Hundred and Five Fetal Deaths Occurring in Ten Thousand Consecutive Admissions to the Obstetrical Department of the Johns Hopkins Hospital.*
2. MARTIN, W. F. *Value of Hydrotherapy in Urology.*
3. *THOMAS, G. T., AND BRAASCH, N. F. *The Practical Value of Chemical Tests of Renal Function in Surgical Conditions of the Urinary Tract.*
4. KERRISON, P. D. *The Treatment of Advanced Tympanic Deafness. Clinical Observations Bearing on the Problems Involved.*
5. JONES, E. L. *The Relation of the Rhinopharynx to the Middle Ear and Mastoid.*
6. FOWLER, E. P. *The Origin of Labyrinthine Rest Tone.*
7. *NOVAK, E. *The Atropin Treatment of Dysmenorrhea.*
8. NAVAN, J. F. *The Endowment of Motherhood.*
9. ELLIS, A. W. M., CULLEN, G. E., AND VAN SLYKE, D. D. *The Amino-Acid Content of the Blood and Spinal Fluid of Syphilitic and Non-Syphilitic Individuals.*
10. *EISENDRATH, D. N. *The Effects of Collargol as Employed in Pyelography.*
11. DUNNING, H. S. *Fractures of the Inferior Maxilla. A Report of One Thousand and Sixty-five Cases Treated.*
12. WILLIAMS, A. W. *A Portable Positive Pressure Apparatus for Administration of Ether by Intratracheal Insufflation.*
13. HENDERSON, M. G. *Resection of the Knee Joint for Tuberculosis.*
14. DICK, A. F., AND DICK, G. R. *The Bacteriological Examination of the Urine in a Case of Eclampsia.*
15. MAYORAL, A. *Report of a Case of Acute Dilatation of the Stomach.*
16. BOSMOT, E. *Quinin Salts in Post-operative Cases. Preliminary Report.*

1. Williams in an exhaustive analysis shows that syphilis is far and away the most common etiologic factor concerned in the production of death, presenting an incidence of 26.4%. Toxemia, including eclampsia and nephritis, accounted for only 6.5% of deaths; 17.4% were due to dystocia. The article is of much interest and value.

3. These authors, while not underrating the phenolsulphonephthalein test for renal function, contend clinical data and surgical necessity should be the determining factors in deciding whether an operation is or is not necessary.

7. Novak is an advocate of this form of treatment.

10. Eisendrath shows experimentally the dangers of collargol or any substance injected into the renal pelvis under pressure or in too large amounts. He, however, claims that there is no danger in the human subject, provided ordinary care is taken not to use pressure or large amounts. [E. H. R.]

JANUARY 16, 1915.

1. *CUSHING, H. *Concerning the Results of Operations for Brain Tumor.*

2. ***Gillhorn**, G. *Three Cases of Extraperitoneal Cesarean Section.*
3. ***Robertson**, W. E., **and Klander**, J. V. *Various Types of Lues. A Clinical and Laboratory Study.*
4. **Babcock**, W. W. *Osteoplastic Surgery of the Face.*
5. ***Barber**, W. H., **and Draper**, J. W. *Renal Infection. A Further Experimental Study of Its Relation to Impaired Ureteric Function.*
6. ***Phemister**, D. B. *Necrotic Bone and the Subsequent Changes Which It Undergoes.*
7. **Steindler**, A. *Coxa Vara Adolescentium Traumatica.*
8. **Ridlon**, J. *Coxa Vara.*
9. ***Smith**, G. G. *Separate Renal Function. Observations as Determined by the Ureter Catheter and Phenolsulphonephthalein.*
10. ***MacGowan**, G. *Hematogenous Kidney Infections.*
11. ***Cunningham**, J. H. *Acute Unilateral Hematogenous Infections of the Kidney.*
12. **Zapfle**, F. C. *Autogenous Vaccine in Treatment of Sciatica.*

1, 2, 3, 5. These articles are of interest, but not particularly suited to review.

6. This paper is of considerable practical interest and well illustrated by plate.

9. Smith shows that after the intravenous injection of 6 mg. phenolsulphonephthalein, each kidney of a normal pair begins to excrete the dye in about 3 minutes, and in the next 15 minutes puts out about 15%. If a sound kidney, which has a diseased fellow, excretes 15% it is at least equal to one normal kidney; if more than that it is already taking up the work of both. Such a kidney may put out 30% in this period, or as much as two normal kidneys combined.

10, 11. These two papers are an interesting and valuable review and contribution to this subject.

[E. H. R.]

Journal of Infectious Diseases.

November, 1914.

1. ***Kendall, Day and Walker.** *The Metabolism of Saprophytic Human Tubercle Bacilli in Plain, Dextrose, Mannite and Glycerin Broths.*
2. ***Kendall, Day and Walker.** *The Metabolism of Certain Rapidly Growing Human Tubercle Bacilli in Broth Free from Lipoids and Fatty Substances.*
3. ***Kendall, Day and Walker.** *The Metabolism of Certain Rapidly Growing Human Tubercle Bacilli in a Modified Uschinsky Medium.*
4. ***Kendall, Day and Walker.** *The Metabolism of Certain Rapidly Growing Tubercle Bacilli in Media with Inorganic Salts as Sources of Nitrogen.*
5. ***Kendall, Day and Walker.** *The Metabolism of "Lepra Bacillus," Grass Bacillus and Smegma Bacillus in Plain, Dextrose, Mannite and Glycerin Broths.*
6. ***Kendall, Walker and Day.** *The Occurrence of a Soluble Lipase in Broth Cultures of Tubercle Bacilli and Other Acid-fast Bacteria.*
7. ***Kendall, Walker and Day.** *The Relative Activity of the Soluble Lipase and Lipase Liberated During Autolysis of Certain Rapidly Growing Tubercle Bacilli.*
8. ***Kendall, Walker and Day.** *Observations on the Specificity and Thermostability of the Lipase Developed During the Growth of a Rapidly Growing Tubercle Bacillus in Media of Varied Composition.*
9. ***Kendall, Walker and Day.** *A Comparison of the Curves of Lipolytic Activity and Proteolysis of Certain Rapidly Growing Human Tubercle Bacilli in Media of Varied Composition.*
10. ***Kendall, Walker and Day.** *A Comparison of the Curves of Lipolytic Activity and Proteolysis of Certain Acid-fast Bacilli in Nutrient Broths.*
11. **Dewey and Mezum.** *The Effect of Cholesterol on Phagocytosis.*
12. **Davis.** *The Formation of Chlamydospores in Sporothrix Schenckii.*
13. **Hirsch.** *An Experimental Study of the Influence of Iodin and Iodids on the Absorption of Granulation Tissue and Fat-Free Tubercle Bacilli.*
14. **Elliott.** *The Antigenic Properties of Glycoproteins.*
15. ***Corter.** *The Therapeutic Value of Copper and Its Distribution in the Tuberculous Organism.*
16. **Meigs.** *The Relation Between the Allergic Intracutaneous Reaction and the Symptoms of Anaphylaxis.*
17. **Burmeister.** *The Protein Poisons of the Tonsil.*
18. **Harris.** *Histologic Differentiation by Means of Anilin Stains in Association with "Regressive Mordanting," with Special Reference to Elastic Tissue.*
19. ***Hall and Taber.** *The Effect of Gentian Violet on the Bacillus Tetani, Tetanus Toxin and Certain Laboratory Animals.*
20. ***Browne.** *The Production of Acid by the Bacillus Coli Group.*

1-10. Kendall, Day and Walker print a series of ten papers upon "Studies in Acid-Fast Bacteria," from which the following conclusions have been reached:—

Young, rapidly growing tubercle bacilli are, in part at least, non acid-fast. During the first three weeks of growth of the tubercle bacillus in plain and sugar media there is a rapid accumulation of ammonia, which later gradually, but definitely, recedes.

Early in the growth of the tubercle bacillus the nitrogen of the media is markedly diminished. Later much of the "lost" nitrogen reappears. The reappearance of nitrogen is coincident with the loss of vegetative activity of the organism and is possibly due to autolysis. Similar results were found with other members of the acid-fast group, notably the smegma and the grass bacillus.

All forms of acid-fast bacilli produce in a wide variety of media a free, soluble, thermostable, non-diffusible lipase during the period of active development, the activity of which is proportionate to the luxuriance of growth of the organism. The lipase curve is parallel to that of the ammonia. Washed tubercle bacilli also contain such a soluble lipase, although it is less active than that previously freed from the bacilli. It is impossible to state whether this soluble lipase, found free in the media, is a result of autolysis or is an exolipase.

15. Copper, introduced into the guinea-pig in all forms and in every manner, has no effect upon tubercular lesions. It is suggested that this is due to the fact that all such salts become in the body colloidal copper, which cannot penetrate the tubercle or other necrotic areas.

19. The addition to culture media appropriate for the growth of the tetanus bacillus of gentian violet inhibits growth when in proportion of 1:10,000; prevents growth without the destruction of the organism in 1:100; and destroys its virulence in 1:10. The practical application of this agent in the laboratory is precluded by the excessive soiling of apparatus by such strong solutions as are necessary to secure avirulence.

20. Browne, in a most interesting and complete article upon acid production by the coli group, states that maximum fermentation takes place in 20 hours at 37°C., provided 0.5 c.c. of a 24-hour peptone culture be used as an inoculum, and the carbohydrate be present in 1% solution. The extent of acid production depends, not on the amount of media nor the power of the organism to ferment, but upon the tolerance of the particular strain to the acid itself. This is clearly

demonstrated by further acid production following neutralization of the acid already formed. This may take place until the carbohydrate is completely exhausted. The greatest amount of acid is produced in media containing the monosaccharids, less from the disaccharids, and least from Raffinose, a trisaccharid.
[L. H. S.]

Journal of Medical Research.

November, 1914.

1. Dayton. *Reliability of Dogs as Subjects for Experimental Nephritis.*
2. Buerger. *Recent Studies in the Pathology of Thrombo-Angiitis Obliterans.*
3. Darling. *The Endotympanum of Hoffman's Sloth.*
4. Gurd. *Studies upon Anaphylaxis and Its Relationship to Immunity. Study I. The So-called Incubation Period in Transferred Anaphylaxis.*
5. Ishii and Loeb. *A Comparative Study of the Growth of Normal Mouse Carcinoma and of Mouse Carcinoma with an Experimentally Decreased Virulence.*
6. Ohler. *Experimental Polyneuritis. Effects of Exclusive Diet of Wheat Flour, in the Form of Ordinary Bread, on Fowls.*
7. Mitchell and Bloomer. *Experimental Study of the Chicken as a Possible Typhoid Carrier.*
8. Ower. *Early Aneurysm of the Aorta.*
9. Smyth. *A New Medium for the Cultivation of Chick Tissues in Vitro, with Some Additions to the Technic.*
10. *Floyd. *The Interrelationship of Dry Pleurisy, Pleurisy with Effusion and Empyema.*
11. Denny and Frothingham. *Experimental Arterial Disease in Rabbits.*
12. *Southard and Canavan. *On the Nature and Importance of Kidney Lesions in Psychopathic Subjects.*
13. Simpson. *The Small Kidney, with Special Reference to the New Formation of Tubules.*
14. *Major. *The Pathological Anatomy of the Pancreas in Diabetes.*

10. Floyd concludes from a series of animal experiments that acute pleuritis, whether dry or associated with serous or purulent exudates, is essentially a pathological unit. The extent of the process and the nature of the fluid depends upon the virulence of the infection, the body resistance and the extent of chemiotaxis which the infecting organism excites.

12. In 100 psychopathic autopsies, Southard and Canavan found gross or macroscopic renal involvement in every instance. In many cases, however, the extent of this process had little clinical significance. Chronic interstitial nephritis was demonstrated grossly in 42%, microscopically in 66%. These figures are striking and are of considerable importance. Detailed study of the occurrence of plasma cells in the kidney substance, and the relation between their presence and certain psychopathic states follows.

14. Major found the islands of Langerhans in diabetes normal in 44% and the seat of fibrosis in 46%. In 46% of the latter hyaline degeneration was found, which was the most striking and constant lesion associated with diabetes, since in only one instance was it found in a non-diabetic case. The inevitable conclusion is drawn that no anatomical evidence exists to prove the diabetes is due to pancreatic disease.
[L. H. S.]

Annals of Surgery.

October, 1914.

1. *Oppel, W. A. *Principles of Operative Treatment of the Diseases of the Large Intestine.*
2. *Jones, S. F., and Whitman, R. C. *Primary Sarcoma of the Lower End of the Femur, Involving the Synovial Membrane.*
3. Alexander, E. G. *Treatment of Old Contracted Cicatrices.*
4. Elsberg, C. A. *Laminectomy for Spinal Tumor.*
5. Bryan, R. C. *Aneurysm of the Sciatic Artery.*
6. Torek, F. *Disappearance of Recurrent Mammary Carcinoma after Removal of the Ovaries.*
7. Speed, K. *Injuries of the Great Toe Sesamoids.*
8. *Mann, A. T. *The Free Transplantation of Fascia Lata.*
9. *Whitman, R. *A Critical Analysis of the Treatment of Fracture of the Neck of the Femur.*
10. Hart, H. H. *Flash-light Autochrom Photography of Pathological Subjects.*

1. Oppel's comprehensive contribution is based upon an experience of 41 cases of resection or exclusion of the large intestine. He warns against the formation of a cul-de-sac. If this cannot be avoided he recommends making a mucous fistula at the proximal end of the cul-de-sac. He condemns the unilateral exclusion of the large intestine effected by means of ileocolostomy with division of the distal portion of the ileum. The Giordano—Bergmann operation (caeco-sigmoidostomy) and Montprofit's (division of ileum and double implantation into sigmoid) are carefully considered and condemned. An economical (short loop) partial unilateral exclusion (entero-anastomosis) is favorably regarded for non-malignant obstructions (pericolic contractions, kinks and benign strictures). For such conditions at the flexures colocolostomy (transverse to ascending or to descending) with short loop is considered rational and leaves no culs-de-sac. An exception to preference of partial unilateral exclusion over complete unilateral exclusion is in strictures of the cecum. Here ileo-transversostomy with division of the distal ileum is better than same anastomosis without ileal division. In case of difficulty in bringing the ends of the colon together after resection (resection of ascending and transverse colon), Oppel suggests a high ileocolostomy (not an ileo-sigmoidostomy) with formation of mucous fistula at top of right hand cul-de-sac. Appendicostomy is considered worthy of wider recognition.

2. Jones and Whitman report fully and discuss at length a case of primary sarcoma of the lower end of the femur, involving the synovial membrane. Exploration with removal of section for microscopical examination revealed the nature of the condition. High thigh amputation was performed, but the patient died in three months of metastases in the lungs. Prints of x-rays and photomicrographs are given. The literature has been searched and only 17 cases found.

8. Mann's paper is based upon an experience of 44 cases of fascial and tendon transplants in animals and several in man. He gives in detail the use of two strips of ilio-tibial band to strengthen a large umbilical hernia and of one strip to strengthen a Bassini operation. He pictures the use of fascia to strengthen a Ferguson operation. He emphasizes the importance of laying the transplant *in situ* so that its fibres are "on the stretch."

9. Whitman clearly sets forth his abduction treatment of fractures of the neck of the femur. He points out the greater certainty of contacting the fragments and of maintaining their contact by this method. Age is no contra-indication. In fact, the possibility of raising the head of the bed instead of the necessity of raising the foot of the bed in extensive treatment diminishes the likelihood of hypostatic congestion, and the possibility of turning the patient instead of the enforced rest upon the back in extension treatment diminishes the likelihood of bed sores. [T. W. H.]

Obituary.

DUDLEY P. ALLEN, M.D.

Dr. Dudley P. Allen, an eminent surgeon of Cleveland, Ohio, died in New York City on Wednesday, Jan. 6, 1915. Throughout his active and useful life he was so often and so closely identified with Boston, and he has had so many professional friends and acquaintances here, that his death calls for more than a passing notice in these columns.

Dr. Allen was born in Kinsman, Ohio, March 25, 1852. Both his father, Dr. Dudley Allen, and his grandfather were physicians. After graduating from Oberlin College in Ohio, he came to the Harvard Medical School, where, after following the usual course, he received the degree of M.D. During the year 1879-1880 he was surgical house-officer in the Massachusetts General Hospital, being assistant to Drs. Samuel Cabot, J. Collins Warren, and C. B. Porter; and it was in that school of surgery—where he was also associated with Drs. Henry J. Bigelow, Richard M. Hodges, H. H. A. Beach, John Homans and others—that he developed an intense interest in the practical side of surgery, and began a career which in course of time brought him to the front rank among the surgeons of the country. After finishing his term of service at the hospital he went to Europe, where he passed several years attending lectures and following the work at all the best clinics, especially the surgical ones, in Berlin, Leipzig, Freiburg, Vienna, London and Paris. On returning to America in the early 80's he settled in Cleveland, and began to teach and practise surgery. He soon became lecturer on surgery at the Western Reserve Medical School, and later was appointed professor of surgery and clinical surgery.

Dr. Allen was early given a position on the staff of the Lakeside Hospital, and for many years he was visiting surgeon in that institution, having in charge a very large clinic. His private practice grew rapidly, until, as a surgical consultant, his services were in constant requisition all over the state of Ohio, and even beyond its boundaries. He was greatly interested in the development of the Cleveland Medical Library, and gave to that institution material assistance in many different ways. Finally, he was chosen president of the Ohio State Medical Society. As time went on he came even more and more to the front, for his intelligence, courage, and industry, and his deep interest in all problems connected with medicine and surgery brought him into prominence throughout the country. For years he was secretary of the American Surgical Association, and finally (1906-1907) he was president of that association. In 1906 he was elected Honorary Fellow of the Philadelphia Academy of Surgery, and in 1908 Oberlin College conferred upon him the degree of LL.D.

During all this time Dr. Allen frequently came to Boston; sometimes for the purpose of reading papers on professional subjects, and at other times to study methods of operation and instruction. He always preserved the keenest interest in the medical practices and traditions of Boston. In 1910 he resigned all his medical positions and retiring from active practice, started with his wife (formerly Miss Elizabeth S. Severance of Cleveland) on a tour around the world. On his return to Cleveland after this long journey, a banquet was given in his honor by his medical colleagues, and the large attendance and the cordial and dignified character of the addresses attested the warm affection and the high esteem in which he was held.

Dr. Allen's interests were not limited to professional fields. Both music and art claimed a large share of his attention. His superb collection of engravings, etchings, pictures, and porcelain includes many rare specimens of the choicest variety. He was a recognized expert throughout the country in old Chinese porcelains. Undoubtedly it was because of his great knowledge of art, and of his love for it, that he was made a trustee of the Cleveland Museum of Art. He was aso deeply interested in religious and philanthropical work, as well as in many other directions.

He died of pneumonia after a few days' illness.

He had many lovable characteristics, and was a loyal friend. His loss will be keenly felt by those who had the privilege of knowing him well. He was one of those men whose virile intelligence, persistent industry, and deep-seated humanity have done much to elevate the tone of the profession in this country, and to widen the sphere of its influence.

G. H. M.

Miscellany.

CONTAMINATION OF LAKE WATERS.

In last week's issue of the Journal we published an editorial commenting on the contamination of lake waters and the consequent risk of disseminating typhoid and other enteric diseases by the use of such waters for drinking purposes. In anticipation of action by the United States Public Health Service, the Erie railroad lake lines have issued the following regulations governing the water supply aboard their ships and its protection:—

"The health of the ship's company is fully as important as the safety of the ship and its cargo, and the supervision of the water supply will be the care of the master exclusively and cannot be delegated by him to any one.

"Isolated sources of supply and methods of distribution have been, or will be, provided, and under no circumstances will the tanks be filled from or through any other. The sea cock will be kept locked and the key be in the possession of the master.

"When water is to be taken, the master will give, or send, the key to the engineer on duty, who will personally see that the sea connection is thoroughly boiled out by means of the steam connection provided for the purpose for at least five minutes before opening the sea cock. The engineer will also personally close and lock the sea cock and return the key to the master.

"Water tanks are to be thoroughly cleaned and scrubbed out with a strong caustic solution at least one in each month and the solution drained and flushed away through the distribution service.

"Except in case of fire, buckets or other vessels are not to be dipped into tanks, and every effort is to be made to keep them free from contamination.

"In taking water, masters will exercise due caution with regard to ships ahead and haul courses, if necessary, to clear their wake.

"Drinking cups or vessels used in common should be thoroughly boiled at frequent intervals or discarded, and the use of water buckets as containers for drinking water should be discouraged, as far as possible. When used in fire holds, they should be boiled out frequently with the steam hose.

"Natural ice is not to be taken aboard under any circumstances unless artificial is unobtainable, and then only when its source is clearly known and satisfactory, and in quantity only sufficient for immediate needs. Ice boxes should be thoroughly scrubbed out after any such supply of doubtful quality."

◆

SCHOOL FOR HEALTH OFFICERS.

HARVARD UNIVERSITY AND MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

A SERIES of afternoon lectures at the Harvard Medical School from 5 to 6 p.m. Undergraduates and instructors of the Harvard Medical School and of the Massachusetts Institute of Technology may obtain free cards of admission to the entire course by applying to the Director, Dr. M. J. Rosenau Harvard Medical School.

1. *School Hygiene*—Dr. T. F. Harrington, Director of Hygiene in the Boston Public Schools. Three lectures, February 10, 17 and 25, supplemented by practical exercises.
2. *Hygiene in the Tropics*—Dr. Richard P. Strong, Professor of Tropical Medicine, Harvard Medical School. Six Lectures, April 7, 28 and May 5, 12, 19 and 26.
3. *Sanitary Law—Legal Powers of Health Officers*—Prof. Eugene Wambaugh, Professor of Law, Harvard Law School. Six exercises, April 1, 6, 8, 13, 27 and 29.
4. *Infant Mortality*—Dr. John L. Morse, Associate Professor of Pediatrics, Harvard Medical School. Three lectures, March 29, April 5 and 12.
5. *Ocular Hygiene.*—Dr. F. H. Verhoeff, Instructor in Ophthalmic Pathology, Harvard Medical School. Two lectures, March 15 and 16.
   Illumination—Dr. Louis Bell, Electrical Engineer. One lecture, March 17.
6. *Oral Prophylaxis*—Dr. W. H. Potter, Professor of Operative Dentistry, Harvard Dental School. Three lectures, May 6, 13 and 20.
7. *Personal Hygiene*—Dr. W. B. Cannon, Professor of Physiology, Harvard Medical School. Six lectures, February 9, Exercise; February 12, Fatigue; February 16, Rest; February 19, Bathing; February 23, Clothing; February 26, Diet.
8. *Medical Inspection of Immigrants*—Dr. M. V. Safford, U. S. Public Health Service, Medical Inspector of Immigrants, Boston. Two lectures, March 19 and 26, supplemented by practical exercise.
9. *Venereal Prophylaxis*—Dr. E. H. Nichols, Associate Professor of Surgery, Harvard Medical School. One lecture, Friday, April 30.
10. *Municipal Sanitation*—Dr. C. V. Chapin, Supt., Board of Health, Providence, R. I. Three lectures, April 26, May 3 and 10.
11. *Relation of Animal Diseases to Public Health*—Dr. Theobald Smith, Professor of Comparative Pathology, Harvard Medical School. Six lectures, March 1, 3, 5, 8, 10 and 12.
12. *Mental Hygiene*—Dr. E. E. Southard, Professor of Neuropathology, Harvard Medical School. Six exercises, February 18, 25, March 4, 11, 18 and 25. Given at the Psychopathic Hospital.
13. *Diet and Pellagra*—Dr. Joseph Goldberger, Surgeon U. S. Public Health Service, Washington. One lecture, April 2. (Cutter Lecture in Preventive Medicine—open free to press and public.)
14. *The Phenomena of Infection*—Dr. Victor C. Vaughan, Professor of Hygiene and Physiological Chemistry and Dean of the School of Medicine and Surgery, University of Michigan. Three lectures, April 14, 15 and 16. (Cutter Lectures in Preventive Medicine—open free to press and public.)
15. *Tuberculosis*—Dr. John B. Hawes, 2d, Secretary Board of Trustees, Massachusetts Hospital for Consumptives. Six lectures, February 1, 4, 5, 8, 11 and 15, supplemented by four practical exercises.
16. *Posture and Prevention of Deformities*—Dr. R. W. Lovett, Assistant Professor of Orthopedic Surgery, Harvard Medical School. Three lectures, March 22, 23 and 24.
17. *Social Service*—Dr. Richard Cabot, Assistant Professor of Clinical Medicine, Harvard Medical School. One lecture, March 9, supplemented by practical exercises under the supervision of Miss Ida Cannon at the Social Service Department of the Massachusetts General Hospital.

Correspondence.

EARLY PICTURES OF ACROMEGALY.

Boston, January 11, 1915.

Mr. Editor: In the *Lancet* for December 19, in an article entitled "A Case of Acromegaly 200 Years Ago," Dr. Leonard Mark calls attention to the paintings of Richard Dickinson, who lived at Scarborough, England, 1670-1738. There are seven original paintings by different artists, one by Virtue in 1725, showing a typical acromegalic facies. Mark speaks of this being one of the earliest representations of a rare disease, only recognized of late years, and states that, to his knowledge, it is the earliest picture of an acromegalic to be found in England. He speaks of two other representations to be found on the continent at an earlier date; one, the portrait of a giant at the court of the Elector of the Palatinate, Frederick II, which was painted in 1553; another is the carved figure of a woman, about the 13th century, which is or was on a flying buttress of Rheims Cathedral. There is little hope of its being still extant. In connection with this subject, an exhibition of miniatures at the Boston Public Library from the Grimani Breviary is of interest. This breviary contained nearly 2000 pages and was the masterpiece of the Flemish miniature paintings. It dates from the 15th century. Some of the paintings are thought to be by Hans Memling. No. 1571 is the picture that interests us in this connection. It is of St. Catherine disputing with the doctors (3d century). Without doubt, contemporary Flemish faces (15th century) were the models. This picture is by an unknown artist. In the group around St. Catherine are two figures which stand out unquestionably as typical acromegalics, the immense prognathous jaw, and large face in one figure being particularly interesting. One of the lower figures had also typical facial characteristics. In the other fifteen pictures, some of sacred subjects, some of profane, there is no hint of an acromegalic face, though the broad features of the Flemish type are faithfully portrayed.

Very truly yours,
Wm. Pearce Coues, M.D.

◆

BELGIAN PHYSICIANS' RELIEF FUND.

In his stirring appeal for aid for the Belgian physicians, Professor Charles Jacobs of Brussels states that 1000 doctors are poverty-stricken, and that 2000 to 3500 doctors are suffering cruelly through this war.

That 2000 physicians need to be supplied the necessities of life would seem a low estimate. It seems probable that the physicians' families will average four members. That means 8000 members of physicians' families are dependent upon outside contributions. $4.40 will supply sufficient food to sustain life for four for one month. Belgian physicians and their families therefore, absolutely need at least $8800 worth of food every month.

For the first month, contributions of American physicians aggregated $1414. Will the medical profession of America accept its opportunity and meet its share of this responsibility by prompt and repeated contributions?

Every cent of every dollar contributed will be available for the purchase of supplies as the carrying charges are provided for by the American Commission for Relief in Belgium.

The first one thousand dollars contributed have been expended by the Executive Committee for food and supplies, and the packages properly labeled have been started for their destination.

By order of the Executive Committee.
Howard C. Taylor, M.D., *Secretary.*
F. F. Simpson, M.D., *Treasurer.*

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION.

Full List of Names of all Contributors up to and Including January 16, 1915.

CONTRIBUTIONS:

Union Trust Company, Pittsburg, Pa.	Banking Facilities
Sterrett & Acheson, Attys., Pittsburg, Pa.,	Professional Service
Dr. Frank Overton, Patchogue, N. Y.	$25.00
Dr. Franklin H. Martin, Chicago, Ill.	100.00
Dr. F. F. Simpson, Pittsburg, Pa.	100.00
Dr. S. Peskind, Cleveland, Ohio	25.00
Dr. and Mrs. George C. Smith, Mansfield, Ohio.	5.00
Dr. Samuel Ayers, Pittsburg, Pa.	20.00
Dr. Edwin Walker, Evansville, Ind.	25.00
Dr. Boleslaw Lapowski, New York, N. Y.	10.00
Dr. Thos. E. Satterthwaite, New York, N. Y.	20.00
Dr. Thomas L. Stedman, New York, N. Y.	25.00
Dr. Richard E. Eustis, Boston, Mass.	10.00
Dr. Mark W. Richardson, Boston, Mass.	10.00
Dr. Wm. Allen Pusey, Chicago, Ill.	25.00
Dr. M. C. Shelton, Joplin, Mo.	5.00
Dr. Henry F. Walker, New York, N. Y.	25.00
Dr. Boyd Cornick, San Angelo, Tex.	2.50
Dr. David W. Cheever, Boston, Mass.	25.00
Dr. Virgil P. Gibney, New York, N. Y.	25.00
Dr. John B. Murphy, Chicago, Ill.	100.00
Esther F. Boland, Boston, Mass.	5.00
Dr. Chauncey W. Norton, Saranac Lake, N. Y.	25.00
In Memory of H. H. C., Boston, Mass.	10.00
Dr. S. J. Meltzer, New York, N. Y.	15.00
Dr. David Bovaird, New York, N. Y.	25.00
Evelyn G. Manter, Winthrop, Me.	10.00
Dr. L. Maude Warren, Baldwinsville, Mass.	5.00
Dr. Ambrose Talbot, Kansas City, Mo.	10.00
Dr. J. G. R. Mainwaring, Flint, Mich.	25.00
Dr. James C. Thompson, Pittsburg, Pa.	25.00
Dr. Lowell C. Frost, Hollywood, Cal.	10.15
Emma T. Frost	10.15
Dr. F. W. Stetson, Boston, Mass.	10.00
Dr. Guy L. Hunner, Baltimore, Md.	25.00
Dr. George E. Lyon, Moweaqua, Ill.	5.00
Dr. Edward E. Krumbhaar, Philadelphia, Pa.	10.00
Academy of Medicine, Cincinnati, Ohio	100.00
Dr. David S. Moore, Birmingham, Ala.	10.00
Dr. C. M. Banks, Springfield, Tenn.	1.00
Marion Co. Medical Society, Marion, Ohio	25.00
Dr. Henry M. Swift, Portland, Me.	10.00
Dr. E. H. Mackay, Clinton, Mass.	5.00
Dr. R. O. Raymond, Flagstaff, Ariz.	10.00
Dr. J. H. Bertrand, DeForest, Wis.	5.00
Dr. E. S. Reedy, Seattle, Wash.	5.00
Dr. and Mrs. H. C. Wetherill, Denver, Colo.	50.00
Dr. Durnley Lankford, Norfolk, Va.	3.00
Dr. Charles W. Allen, Hoboken, Pa.	5.00
Dr. Wm. V. Hayes, New York, N. Y.	25.00
Drs. Parker and Parker, Peoria, Ill.	5.00
Dr. Heman B. Chase, Hyannis, Mass.	10.00
Dr. John B. Wheeler, Burlington, Vt.	25.00
Dr. Stuart McGuire, Richmond, Va.	50.00
Dr. John G. Clark, Philadelphia, Pa.	50.00
Dr. F. R. Underwood, Seattle, Wash.	5.00
Dr. Abraham Jacobi, New York, N. Y.	100.00
W. A. M., Ossining, N. Y.	2.00
Dr. Theodore C. Janeway, Baltimore, Md.	15.00
Dr. Isaac M. Heller, New York N. Y.	5.00
Dr. S. H. Miller, Joplin, Mo.	5.00
Dr. B. F. Saylor, Redding, Cal.	10.00
Dr. J. Wolf, Pittsburg, Pa.	10.00
Jasper Co. Medical Society, Joplin, Mo.	10.00
Dr. Sidney A. Chalfant, Pittsburg, Pa.	10.20
Dr. Frederick Abbe, Boston, Mass.	10.00
Dr. J. Riddle Goffe, New York, N. Y.	25.00
Dr. Henry F. Graham, Brooklyn, N. Y.	5.00
Total	$1414.00

Expenditures, 450 boxes of food purchased
from Austin Nichols & Co., @ $2.20 per box 990.00

Balance $424.00

HOWARD C. TAYLOR, *Secretary*.
F. F. SIMPSON, *Treasurer*.
By order of the Executive Committee.

THE CUTTER LECTURES.

The Cutter Lectures in Preventive Medicine for the year 1915 will be given at the Harvard Medical School by Dr. Victor C. Vaughan, Professor of Hygiene and Physiological Chemistry and Dean of the School of Medicine and Surgery of the University of Michigan, and Dr. Joseph Goldberger, Surgeon, United States Public Health Service, Washington, D. C.

Dr. Vaughan will lecture on "The Phenomena of Infection" on April 14, 15 and 16.

Dr. Goldberger's subject will be "Diet and Pellagra" and will be given in one lecture on April 2.

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine, and that they should be delivered in Boston, and be free to the medical profession and the press. Others interested are cordially invited.

ROGER PIERCE,
University 5, Cambridge.

APPOINTMENTS.

UNIVERSITY OF OREGON.—*Dr. Howard D. Huskins*, of Western Reserve University, has been appointed professor of biochemistry in the medical department.

NOTICES.

Physicians visiting the city will be cordially welcomed at the following clinics on the days and hours specified.

BOSTON CITY HOSPITAL.—After January 1, 1915, public operations will be performed in the Surgical Amphitheatre each week, on Thursdays, Fridays and Saturdays, at 10 o'clock.

Thursday: First Surgical Service. Dr. Blake.
Friday. Third Surgical Service. Dr. Nichols, and Fouth Surgical (G-U) Service, Dr. Thorndike.
Saturday: Second Surgical Service. Dr. Lund.

Notice of these operations will be sent to anyone expressing his desire to receive it.

CARNEY HOSPITAL.—Dr. Bottomley and Dr. Mahoney will hold an operative surgical clinic every Wednesday at 9. A.M., and at the same hour on the same day Dr. W. R. MacAusland will hold an orthopedic clinic. All physicians are welcome to attend.

MASSACHUSETTS GENERAL HOSPITAL.—1. A surgical clinic Tuesday, at 12, in the out-patient amphitheatre. 2. Operations in the Bigelow amphitheatre Saturdays from 10 to 1. 3. Operations in the Surgical Building except Sunday, from 9 to 1. 4 Daily surgical ward visits at which visiting physicians will be welcome. 5. Clinic in medicine and pathology Tuesdays at 12, by Drs. R. C. and H. Cabot and O. Richardson. 6. Medical clinic Thursday at 12, by Dr. D. L. Edsall.

PETER BENT BRIGHAM HOSPITAL.—Physicians visiting the city will always be cordially welcomed at the Peter Bent Brigham Hospital.

The medical visit takes place regularly every morning beginning at 10 o'clock.

Operations are usually going on throughout the forenoon in the surgical amphitheatre.

The surgical clinic is held in the clinical amphitheatre on Wednesdays at 12.30 P.M.

The medical clinic is held in the clinical amphitheatre on Mondays at 12.30 P.M.

The clinico-pathological demonstration is held in the clinical amphitheatre on Fridays at 3.30 P.M.

SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY.—The thirty-fifth meeting of the New England Pediatric Society will be held in the Boston Medical Library Friday, January 29, 1915, at 8.15 P.M.

The following papers will be read:

1. "Acidosis in Children," Arthur A. Howard, M.D., Boston.
2. "Parenteral Immunization in Conditions of Proteid Sensitization," J. L. Goodale, M.D., Boston.
3. "Weaning—Its Relation to Anaphylaxis as Shown by Differential Blood Counts," H. C. Berger, M.D., Boston.

Light refreshments will be served after the meeting.

E. M. BUCKINGHAM, M.D., *Pres*.
R. M. SMITH, M.D., *Sec'y*.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.—Stated meeting at United States Hotel, Boston, Thursday, February 4, 1915, at 11.30 A.M.

Reader: Edwin A. Locke, M.D., of Boston, for George M. Sheahan, M.D., of Quincy, Mass.

Subject: "Some Considerations in the Medical Treatment of Multiple Arthritis."

F. H. MERRIAM, M.D., *Secretary*,
South Braintree, Mass.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—The Spring meeting will be held in Sprague Hall, Medical Library, Boston, on Wednesday, February 3, 1915, at 2 o'clock.

The following papers will be read and discussed:

1. "Observations on the Mentality of Certain Criminals," Edward B. Lane, M.D., of Boston.
2. "A Case of Death from Double Pneumo-Thorax," George L. West, M.D., Medical Examiner, of Newton.
3. "Accidental Death from a Stray Shot from Unusual Distance," Charles W. Milliken, M.D., Medical Examiner, of Barnstable.

OLIVER H. HOWE, M.D.,
Recording Secretary.

RECENT DEATHS.

DR. SAMUEL AUGUSTUS FISK, who died on Jan. 18 in Boston, was born on Feb. 9, 1856. He received the degree of A.B. from Yale in 1877 and that of M.D. from Harvard in 1880. From 1884 to 1899 he was a professor in the medical school of Denver University. In 1900 he returned to Boston, and in 1905 settled at Brimfield, Mass. He was a member of the Association of American Physicians, the American Climatological Association, and the National Association for Study and Prevention of Tuberculosis. He is survived by his widow.

BOOKS AND PAMPHLETS RECEIVED.

Public Health Laboratory Work, by Henry R. Kenwood, M.B. Paul B. Hoeber, 1914.

The Science and Practice of Dental Surgery. Edited by Norman G. Bennett, M.A. William Wood & Co., 1914.

Gonorrhea and Its Complications in the Male and Female, by David Watson, M.B. Paul B. Hoeber, 1914.

25% Bran

In Tempting Form

To Foster Bran Habits

Pettijohn's is a soft white wheat, flaked much like Quaker Oats. It forms a rich, inviting dish which everybody likes.

The flakes are one-fourth bran, yet the tender bran is almost unapparent. It is unground bran—the most effective form.

You will find in Pettijohn's your ideal of a bran food. It is luscious and nutritious—a welcome daily dish. The bran is efficient in quantity and form.

We ask you to test it. Many thousands of physicians, when they wish to foster the bran habit, are prescribing this breakfast dainty.

Pettijohn's

Rolled Wheat with the Bran

Package Free

We will mail to any physician a full-size package for testing at home or with patients. Please ask us for it.

Most better-class grocers sell Pettijohn's for 15 cents per package. It has national distribution so any grocer can get it from his jobber. For free package, address

The Quaker Oats Company

Chicago, Ill.

ELECTRIC CENTRIFUGES AND VACCINE SHAKERS

Send for Catalog C

INTERNATIONAL INSTRUMENT COMPANY

23 CHURCH STREET CAMBRIDGE, MASS.

Fisk & Arnold

Established 1865

Oldest Manufacturers in New England of

ARTIFICIAL LIMBS

For Every Amputation.

United States Government Bonded Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates a limb for unjointed knee amputation, with toe, ankle, and knee articulation.

A full descriptive catalogue with important suggestions to the patient will be forwarded upon application.

3 Boylston Place, Boston, Mass.

Telephone, Oxford, 3684-M.

INDEX TO ADVERTISEMENTS

Armour & Co. 16
Attleboro Home Sanitarium 11

Back Numbers of Journal 6
Beal Nurses Home and Registry 13
Bellevue 12
Boston City Hospital Male Nurses' Club 5
Boston Hygienic Corset Co. 13
Boston Laboratories 10
Boston Nurses' Club Registry 5
Bournewood Hospital ....Brookline, Mass. 12
Brownrigg, Dr. Albert E. ....Sanatorium 12

Central Directory, Suffolk County Nurses 5
Chandler, Corsets 8
Channing Sanitarium ....Brookline, Mass. 12

Douglas Sanatorium ....Dorchester, Mass. 11
Dr. Givens' Sanitarium ....Stamford, Conn. 12
Dr. Mellus Private Hospital ....Newton, Mass. 12

Eastman Kodak Co. 13

Fisk & Arnold ....Artificial Limbs 15
Fisk Hospital ....Brookline, Mass. 11
For Rent 6
For Sale 6
French Lick Springs ....Pluto Water 14

Glenside ....Sanatorium 12

Harvard Dental School 10
Harvard Medical School 10
Herbert Hall Hospital ....Worcester, Mass. 12
H. O. Oatmeal 2
Household Nursing Association 5

International Instrument Co. 15

Jefferson Medical College of Philadelphia 10

King's Puremalt Department 4

Malden Registry of Nurses 5
Massachusetts General Hospital 8
Medical School of Maine ....Bowdoin College 10
Medical Echo 6
Medico-Chirurgical College of Philadelphia 10
Merck & Co. 13
Millet Tuberculosis Sanatorium 13
Miss Moulton 11
Mulford Co., H. K. 7

Natural Line Corsets 9
Newton Sanatorium ....West Newton, Mass. 12
New York Polyclinic Medical School 10
New York University ....Medical Department 11
Notices 6
Nurses' Directory 5

"On-the-Hill" Sanitarium ....Watertown, Conn 11

Parke, Davis & Co. ....Chemists 2
Pomeroy Company 14
Primrose Maternity Home ....Batavia, N. Y. 12

Quaker Oats Co. 15

Ring Sanatorium ....Arlington Heights 12

Saunders, W. B. Co. ....Books 1
Schering & Glatz 5
Sharp & Dohme ....Chemists 4
Sherman's Bacterins 14
Squibb, E. R. & Sons 9
Storm Binder 16
Sundelius, Gustaf ....Masseur 5

Talks to Journal Advertisers 9
Thomas, F. H. Co. 8
To Let 6
Tower Hall ....Derry, N. H. 12

Waltham Registry of Nurses 5
Wanted 6
Warren Chambers 6
Wellesley Nervine 12
West Newton Home School 11
Westport Sanitarium 11
Woodside Cottages ....Framingham, Mass. 12

ARMOUR AND COMPANY
CHICAGO

To Doctors and Druggists:

SOME of the most valuable medicines are of animal origin. Pepsin, Pancreatin, Thyroids, Pituitary Liquid, Corpus Luteum, Red Bone Marrow, etc., are made from materials supplied by abattoirs.

All glands and membranes used in manufacturing medicines should be perfectly fresh and normal. All animals from which glands and membranes are taken should be healthy. Armour and Company are in position to guarantee the condition of all raw material used in making their therapeutic products and the health of the animals from which this raw material is taken.

Every cow, pig and sheep killed by Armour and Company is inspected by the U. S. Government, and every gland is selected with rigorous care. All raw material is put into process before it has had opportunity to deteriorate, and all finished preparations are analyzed and made to conform to the most reliable standards.

Armour's facilities for manufacturing organo-therapeutic agents are unequaled anywhere, and we believe it is to the interest of Physicians and Pharmacists and their clientele to specify **Armour's** when any remedy of animal origin is required. Literature on request.

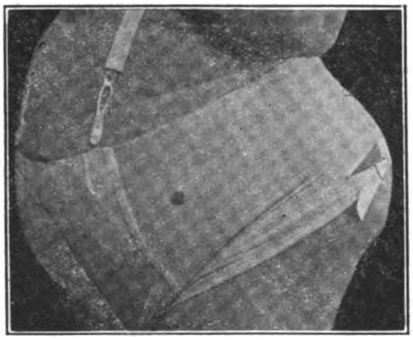
ARMOUR AND COMPANY, Chicago

THE STORM BINDER AND ABDOMINAL SUPPORTER

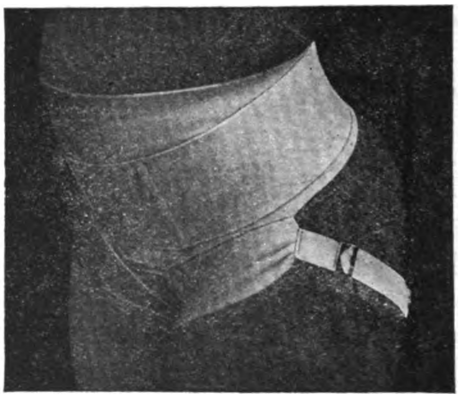
(PATENTED)

Modifications for Hernia, Relaxed Sacro-iliac Articulations, Floating Kidney, High Operations, Ptosis, Obesity, Pregnancy, etc.

Adapted to Use of Men, Women and Children



Weight—418 lbs. With a Storm Binder Obesity Belt.



No whalebones, no rubber elastic—washable as underwear. Suitable for non-operative and post-operative cases. Comfortable for sofa and bed wear and athletic exercises. A practical relief for visceroptosis.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours.

KATHERINE L. STORM, M. D.
1541 Diamond Street, Philadelphia

F. H. THOMAS CO., 689-691 Boylston Street, Agents for Boston and Environs

THE BOSTON
Medical and Surgical
JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

Vol. CLXXII
No. 5

THURSDAY, FEBRUARY 4, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

A Study of Children with Positive Skin Tuberculin Reactions. *By Orville F. Rogers, Jr., M.D.*, Boston.
Rupture of Intestine. *By Lincoln Davis, M.D.*, Boston.
Urinary Acidity in Recurrent Vomiting. *By Willard S. Parker, M.D.*, Boston.
Congenital Pyloric Tumor. *By Charles M. Scudder, M.D.*, Boston.
Studies in Fat Indigestion. *By Charles Hunter Dunn, M.D.*, Boston.
Acute and Chronic Empyema. *By Wyman Whittemore, M.D.*, Boston.

CLINICAL DEPARTMENT

Congenital Cystic Disease of the Kidney. *By Francis S. Watson, M.D.*, Boston.

NEW INSTRUMENT

A Cheap Electric Heater. *By E. von Adelung, M.D.*, Oakland, Cal.

MEDICAL PROGRESS

Bacteriology of the Gastro-Intestinal Tract in Infancy. *By J. L. Morse, M. D., and F. B. Talbot, M.D.*, Boston.

EDITORIALS Federal or Local Administration of Maritime Quarantine.
A Career of Professional and Public Service. A Hospital for Deep Sea Fisheries.
The Nursing Question. Congenital Pyloric Tumor.

For complete table of contents, see first text page.

JUST ISSUED

Volume II of Cabot's Diagnosis

Volume II of Dr. Cabot's work on Differential Diagnosis is along exactly the same lines as the successful Volume I. It is *case-teaching diagnosis*—acquiring facility in diagnosis from the study of cases, from the study of those complaints that bring your patients to you for treatment. It trains you so that when a patient comes into your office and says she has *fainting attacks*, for instance, a group of causes shoots into the field of attention like the figures on a cash register. Then the causes of each particular symptom are narrowed down by elimination until the diagnostic problem is solved.

The *symptom-groups* taken up in Volume II are: Abdominal and other tumors, vertigo, diarrhea, dyspepsia, hematemesis, enlarged glands, blood in stools, swelling of face, hemoptysis, edema of legs, frequent micturition and polyuria, fainting, hoarseness, pallor, swelling of arm, delirium, palpitation and arhythmia, tremor, ascites and abdominal enlargement—a total of 19 symptoms and 317 instructive cases. Preceding the cases under each symptom-group you get the causes of the symptom, the varieties, and other diagnostic helps. The text is illustrated.

Octavo of 709 pages, illustrated. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School.
Cloth, $5.50 net; Half Morocco, $7.00 net.

W. B. SAUNDERS COMPANY Philadelphia and London

Entered at the Post-office at Boston as second-class matter

Tablets
5 grains, bottles of one hundred and boxes of ten

Powder
In one-ounce cartons

Suppositories
10 grains, boxes of six

Schering & Glatz
150-152 Maiden Lane, New York

A soluble, readily absorbed and promptly excreted, practical, efficient and safe **Hypnotic, Sedative and Antispasmodic** which is firmly holding its place against all new comers.

Medinal

When a pure fruit juice is indicated—

When the patient wants "something that's good when I'm well"—

When the convalescent frets over the limited diet—

In short, when you see that Good Cheer is going to help your efforts to install Good Health, prescribe

Welch's
Grape Juice

The absolute purity of Welch's is one of the reasons for its high favor with the medical profession.

Welch's is just the pure, unadulterated, unsweetened juice of choicest selected Concord grapes. In the exact, sanitary Welch method this juice is pressed from the grapes when fresh from the vineyards, and is at once sterilized and hermetically sealed in glass. All the healthful properties of the grape are retained, and the delicious flavor and aroma of the fresh grape are unchanged.

We are glad to mail our literature to any physician who requests it.

The Welch Grape Juice Company, Westfield, New York

The Boston Medical and Surgical Journal

Table of Contents

February 4, 1915

ORIGINAL ARTICLES.

A Study of Children with Positive Skin Tuberculin Reactions. *By Orville F. Rogers, Jr., M.D.*, Boston............ 161
Two Cases of Rupture of Intestine. *By Lincoln Davis, M.D.*, Boston............ 163
Urinary Acidity and Beta-Oxybutyric Acid Determinations in Recurrent Vomiting. *By Willard S. Parker, M.D.*, Boston 164
The Significance of X-Ray Examination Following Operation for Congenital Pyloric Tumor. *By Charles L. Scudder, M.D.*, Boston............ 166
Some Studies in Fat Indigestion. *By Charles Hunter Dunn, M.D.*, Boston............ 167
Acute and Chronic Empyema. *By Wyman Whittemore, M.D.*, Boston............ 168

CLINICAL DEPARTMENT.

Report of a Case of Congenital Multiple Cystic Disease of the Kidneys in Which One Kidney was Removed. *By Francis S. Watson, M.D.*, Boston............ 169

NEW INSTRUMENT.

A Cheap Electric Heater.. *By Edward von Adelung, M.D.*, Oakland, Cal............ 171

MEDICAL PROGRESS.

The Bacteriology of the Gastro-Intestinal Canal in Infancy. A Summary. *By John Lovett Morse, M.D.*, and *Fritz B. Talbot, M.D.*, Boston............ 171

SOCIETY REPORTS.

Clinical Conference, Neurological Institute, First Division, New York. Meeting of Nov. 12, 1914............ 175
The College of Physicians of Philadelphia. Meeting of Nov. 4, 1914............ 178
New England Pediatric Society. Meeting of Dec. 4, 1914.. 180

BOOK REVIEWS.

Therapeutics of Dry Hot Air. By Clarence E. Skinner, M.D... 182
Modern Medicine. Its Theory and Practice. By Sir Wm. Osler, M.D., and Thomas McCrae, M.D............ 182
Diseases of the Rectum and Anus. By P. Lockhart-Mummery.. 183
The Backward Baby. By Herman B. Sheffield, M.D............ 183
A Mind Remedy. By John G. Ryerson, M.D............ 183
A Treatise on Diseases of the Rectum and Anus. By A. B. Cooke, M.D............ 184
The Tonsils—Faucial, Lingual and Pharyngeal. By Harry A. Barnes, M.D............ 184

EDITORIALS.

Federal or Local Administration of Maritime Quarantine.. 185
A Career of Professional and Public Service............ 187
A Hospital Ship for Deep Sea Fisheries............ 188
The Nursing Question............ 189
Congenital Pyloric Tumor............ 190
Medical Notes............ 191

Current Literature............ 193

MISCELLANY.

Regulations of State Department of Health............ 197
The Ambulance Construction Commission............ 198
Insanity in Massachusetts............ 198
Examination of Candidates for Assistant Surgeon............ 199
Belgian Physicians' Relief Fund............ 199
Notices, Appointments, Resignations, Recent Deaths............ 200

Original Articles.

A STUDY OF CHILDREN WITH POSITIVE SKIN TUBERCULIN REACTIONS.*

By Orville F. Rogers, Jr., M.D., Boston.

[From the Children's Medical Department, Massachusetts General Hospital.]

This study was made at the suggestion of Dr. Fritz B. Talbot, from the records of the Children's ward of the Massachusetts General Hospital, starting with the establishment of that ward on July 1, 1910, and running up to July 1, 1913. Therefore the results here reported deal with children who have been out of the hospital at least one year and not over four years. The average of those heard from was two years, four months.

Those children are included on whom a Von Pirquet (skin tuberculin) reaction was done in the usual manner, with positive results. There were 69 of these in the three years. A number of positive cases were discovered in doing routine skin tuberculin tests, where there was no reason to suspect tuberculosis. These are included in this report, while obvious tuberculosis, in which the skin test was negative, is excluded.

The knowledge of the present condition of these children was gathered from various sources in August, 1914. Some came into the hospital in response to letters, others wrote, and the out-patient records were also used. In all we gained sufficient evidence about 42 children to warrant including them in the report. In addition to this we have eight who died in the hospital—a total of 50 out of 69 whose fate is known with more or less certainty.

The table arranged according to age shows that on the whole the younger the patient, the graver the prognostic import of the positive skin reaction. In the first two years of life 11 out of the 17 of whom we know anything, or 65%, are dead. These figures could easily be made to read 11 out of 15, as the two children under one year recorded as alive, might have been left out on the grounds of too fragmentary a knowledge of their after-careers. Neither of these patients apparently had tuberculosis during his hospital stay, but one of them showed signs in his lungs a few months afterwards—since when he has been heard from only indirectly, but is probably alive.

Of that same group of 17, only four—or 23%—have no evidence of active tuberculosis, and only three are really well—a per cent. of 18.

The corresponding figures for children over two years are: known about, 33; dead, 7—21%; alive with no signs of active tuberculosis—21, or 64%; and alive with no illness whatsoever 10, or 30%—almost three times as favorable an outlook.

The second table shows the 69 cases arranged according to diagnosis. In the lowest row of this table are collected the statistics of 24 of the patients—their diseases being non-tubercular, with two exceptions, and none of them having tuberculosis at present as far as known. The two tubercular patients had solitary tubercle(?) and tuberculosis of the right elbow respectively, but nothing has been heard from either of them since discharge.

The most frequent of the tubercular diseases were tubercular peritonitis and pleurisy. Of the five peritonitis cases heard from three had died, while two others are perfectly well. It is interesting to note that these patients either died

---

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

Table I.—Age Distribution of Positive Cases.

Age.	Total Positive Reactions.	Total Known About.	Total Alive.	% Alive.	Alive and Free from Tuberculosis.	% Free from Tuberculosis.	Alive with Active Tuberculosis.	Total Dead.	% Dead.	Died of Non-Tubercular Illness.	Died of Tuberculosis.	Died of Unknown Cause.
Under 1 year	8	7	2	29	1	14	1	5	71	1	4	0
1 to 2 years	10	10	4	40	3	30	1	6	60	1	4	1
2 to 3 "	9	5	4	80	3	60	1	1	20	0	1	0
3 to 4 "	9	4	3	75	1	25	2	1	25	0	1	0
4 to 5 "	7	5	3	60	3	60	0	2	40	1	1	0
5 to 6 "	9	8	6	75	6	75	0	2	25	0	2	0
6 to 7 "	4	3	3	100	3	100	0	0	0	0	0	0
7 to 8 "	2	0	—	—	—	—	—	—	—	—	—	—
8 to 9 "	5	4	4	100	2	50	2	0	0	0	0	0
9 to 10 "	3	1	1	100	1	100	0	0	0	0	0	0
Over 10 "	3	3	2	67	1	33	1	1	33	1	0	0
Totals	69	50	32	64%	24	48%	8	18	36%	4	13	1

of tuberculosis quite promptly or else recovered entirely so far as we know at present. Age apparently did not dictate the outcome, for the two types averaged about the same.

The children who had pleurisy are all in good health if the five who reported are any criterion. The average age of these children is four years.

The cases of miliary tuberculosis and tubercular meningitis perhaps should be classed together but the meningitis cases have been kept separate, as miliary tuberculosis did not appear in the discharge diagnosis. The course of these cases was naturally very unfavorable with the exception of one child who will be alluded to later. The average age of these patients was younger than any other group—two years, two months. It is of interest that two other cases of tubercular meningitis, proven by postmortem, gave negative skin reactions.

The cases of bone tuberculosis of which we have word are not doing well. Both the children with Pott's disease are reported as doing very poorly, and the little girl with periostitis still has new sinuses forming at intervals.

We have heard from only two of the three patients who had pulmonary tuberculosis, and of these one died of infantile paralysis, and the other still has tuberculosis of the cervical glands—though the lungs appear quiescent.

Glandular tuberculosis was very common, but as it was almost always associated with a more serious disease, which masked it, we can get no clear picture of its effects. One of these patients has since developed pulmonary tuberculosis, and is now in a sanatorium.

The diagnosis of "tuberculosis with otitis media" was made on a little girl of seven months, who gave a strongly positive skin reaction, but in whom the most careful examination failed to locate any focus. She died at Tewksbury one month after discharge from the Massachusetts General Hospital, and the diagnosis sent us from there was marasmus. Therefore she has been

Table II.—Distribution According to Diagnosis.

Diseases.	Total Positive Reactions.	Total Known About.	Total Number Alive.	% Alive.	Number Free from Tuberculosis.	Number with Active Tuberculosis.	Total Number Dead.	% Dead.	Died of Tuberculosis.	Died of Non-Tubercular Illness.	Died of Unknown Cause.
Miliary tuberculosis	6	6	1	17	1	0	5	83	5	0	0
Tubercular meningitis	3	3	0	0	0	0	3	100	3	0	0
Phthisis	3	2	1	50	0	1	1	50	0	1	0
Tubercular broncho-pneumonia	1	1	0	0	0	0	1	100	1	0	0
Pleurisy	8	5	5	100	5	0	0	0	0	0	0
Tubercular peritonitis	8	5	2	40	2	0	3	60	3	0	0
Cervical adenitis	2	1	1	100	0	1	0	0	0	0	0
Bronchial adenitis	1	1	1	100	0	1	0	0	0	0	0
Pott's disease	2	2	2	100	0	2	0	0	0	0	0
Tubercular periostitis	1	1	1	100	0	1	0	0	0	0	0
Tuberculosis and otitis media.	1	1	0	0	0	0	1	100	0	1	0
Lobar pneumonia	8	7	6	86	5	1	1	14	1	0	0
Chronic diarrhea	1	1	1	100	0	1	0	0	0	0	0
24 patients with various diseases, no one of whom now has tuberculosis so far as known	24	14	11	79	11	0	3	21	0	2	1
Totals	69	50	32	64	24	8	18	36	13	4	1

included in the non-tubercular group, thought it is hard to rule out a generalized tuberculosis.

In relation to the question whether children with positive skin tuberculins are predisposed to non-tubercular diseases, it was interesting to find that not one of the 38 patients who had signs of active tuberculosis in the hospital is at present suffering from any non-tubercular affection.

Of the 31 patients who in the hospital showed no signs of tuberculosis save for the positive skin reaction, one has since died of tubercular peritonitis and two more now have signs of activity in the lungs—10%. Many of these have chronic non-tubercular diseases, such as endocarditis, pyelitis, bronchiectasis.

In the group that we know something about there were several interesting cases, about one of which a few words may be said.

He was a boy of four on whom a diagnosis of miliary tuberculosis was made. The history was of anorexia, apathy, and continued fever "for some time." He had enlarged cervical glands, signs of consolidation at both apices, with râles, fluid wave in abdomen, an enlarged liver, palpable spleen, and active reflexes, with a Babinski. In 12,000 white cells he had 54% lymphocytes. No tubercle bacilli in his sputum.

In the course of three weeks the fluid wave disappeared, the other signs remaining the same. He ran a continuous fever, pulse constantly tended upward, and lost weight.

After discharge, according to his mother's story, he remained the same for two to three months and was then sent back to the Cape Verde Islands, where his people came from. There he began at once to gain and now, after three and one-half years, the mother says that he is very well and strong.

While this is only a single case it points to the climatic conditions as being an important factor in this boy's recovery.

In drawing conclusions as to the chances of life for a child who reacts to the Von Pirquet test, we must consider what the mortality is in the average child.

The average age of these children, as it was calculated by adding their ages together and dividing by the number of children, is four years, four months. The average length of time since leaving the hospital was two years, four months. Insurance tables show that of 10,000 children aged four years, four months, 430 would be dead at the end of two and one-third years, a percentage of 4.3.

While the numbers involved in this tabulation are very small the difference between 36% and 4% could hardly be pure chance.

It may be argued that those patients who had an acute form of tuberculosis and died in the Massachusetts General, or were taken home a few days before death, should not be counted in making up our minds as to the probable prognosis of a positive reaction in those who survive. Therefore, eliminating the eight cases which were fatal in the hospital, and one of miliary tuberculosis which died two or three days after discharge, the figures show that nine out of 41 died, a mortality of 22% instead of 36%, but this is again much higher than the ordinary mortality.

If we still further omit from this number, nine, the four who died of non-tubercular illnesses, and the one of unknown cause, we find that we have four out of 36 who died of tuberculosis at least several months after leaving the hospital—11%—almost three times the mortality of the normal.

SUMMARY.

Before the age of two a positive skin reaction seems to be an indication that the child's life is likely to be short.

The mortality among all children, up to the age of 10, who react to the Von Pirquet test is much higher than that of normal children.

The series is too small, and the time since the tests were made, too short, to permit us to draw any but the most general conclusions.

TWO CASES OF RUPTURE OF INTESTINE.*

By Lincoln Davis, M.D., Boston.

Case 1. C. O. No. 196642, East Surgical. Seven years old. Schoolboy. Sent to the Accident Room of the Massachusetts General Hospital on July 19, 1914, at 11.05 A. M., by Dr. Alfred Davidson of Chelsea, with diagnosis of "Ruptured Viscus."

The following history was obtained: Previous health always good. Yesterday afternoon at five o'clock patient was running across a field and fell down, striking on a rock. His parents state that they think he fell about six feet. Immediately complained of pain in his stomach and has vomited many times since. Has passed apparently normal looking urine. Patient now has severe abdominal pain.

P. E. Well developed and nourished child, looks very sick. Lungs negative except for dullness at right base. Examined by Dr. W. H. Smith, who says lungs are not responsible for symptoms. Abdomen slightly distended, with marked spasm and tenderness everywhere. Percussion note tympanitic, with obliteration of liver dullness. No shifting dullness made out. On abdominal wall, over left upper rectus, is a contusion and abrasion, 1 inch in diameter. Temperature 100.2 by rectum. Pulse 148. Respiration 36.

Prepared for immediate operation.

Ether anesthesia. Iodine preparation. Five inch muscle-splitting incision carried down to peritoneum. Peritoneum opened with escape of much fluid and fecal material. Fluid baled out with gauze strips and gut explored. A perforation of the small intestine, reaching across the gut nearly to the mesentery was found. This was closed with No. 1 chromic catgut stitches and reinforced with a second layer of the same. The abdominal cavity was then thoroughly washed out with Tait tube and about 25 liters of salt solution. A cigarette wick was placed to the left flank and another to the pelvis. Abdominal wall was closed in layers with chromic catgut, reinforced by through-and-through sutures of silkwormgut. Patient sent to Ward H in poor condition. Stomach washed before patient was out of ether; considerable greenish fluid removed.

---

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

July 20th. Patient vomited during night once. Pulse has started to drop, but temperature is up. Patient looks very sick. Getting tap water by rectum and stimulation in form of caffein and camphor. Vomited once today.

July 22d. Pulse has steadily come down. Patient looks brighter this morning. Getting milk and lime water. Has not vomited since last note.

July 25th. Patient much brighter. Taking fluids in good amounts. Rectal tap water omitted. Wound septic about all stitches. A corset of adhesive plaster with hooks made and applied to keep wound together in case stitches slough out. Considerable foul discharge.

From this time on the patient made an uninterrupted recovery. There was considerable sloughing of the wound which closed by granulation. On September 2d he was discharged in excellent condition, with the wound healed, wearing an abdominal belt. Bowels acting normally.

Case 2. C. E. A. No 177456. Age eight. Recommended by Dr. J. E. Connelly, of Brookline.

Entered hospital July 27, 1911.

Brought to Accident Room in Brookline Police Ambulance at 12.55 P. M. About one-half hour before entrance was struck by an automobile in front of his home in Brookline.

Examination: Well developed and nourished, little boy, pale, frightened, restless and crying with pain. No evidence of injury to head, chest or upper extremities. There are several slight abrasions on skin of abdomen on left side. Abdomen is held with board-like rigidity, and pressure on it anywhere causes patient to cry out in pain. Tympanitic except in left flank, where there is dullness which does not shift. Liver dullness not obliterated. Over outer side of left thigh is a small lacerated wound.

Patient remained in bed in Accident Room for about one and one-half hours awaiting consent of parents to operation. Was catheterized and small amount of pale urine obtained. Patient seemed to grow steadily paler. He lay quietly in bed and wanted to be left alone. Pulse 140, fair quality. Temperature 98, white cells 39,000. The board-like rigidity of the abdomen, with the rising pulse, high white count and shock, together with the nature of the accident, indicated internal injury with hemorrhage, and immediate operation was advised.

Operation: Septic Room. Ether. Five-inch median suprapubic incision. On opening peritoneum there was a gush of fresh blood, whole cavity was filled with it. Partially swabbed out. Careful inspection of liver and spleen revealed no injury, or source of bleeding. A presenting loop of small intestine was found completely severed, and the mesentery torn. Clamps placed on either side of torn intestine, edges trimmed and brought together in an end-to-end anatosmosis with Connell stitch of Pagenstecker, peritoneal coat united with continuous Lembert stitch. Another loop found where the peritoneum was lacerated completely around the gut, the muscular layer being uninjured. Torn peritoneal edges approximated with continuous Pagenstecker. Inspection of the rest of the intestines, which was very hurried on account of the patient's poor condition, revealed no further injury. Abdominal cavity washed out with hot salt solution. One cigarette wick to pelvis. Wound closed to wick in routine manner in layers. Sent to Ward F in poor condition. Stimulated, shock enema, put in Fowler's position. Given rectal seepage and frequent doses of strychnia.

Patient rallied well. Profuse serous discharge from wick. Unable to retain anything in stomach but water for three days. Bowels moved satisfactorily with enemata. In removing the wick on August 6th under gas a portion of omentum and two coils of intestine were pulled out. Replaced without any ill consequences.

Discharged August 20th in good condition. Wound a small granulating spot. Eating well. Bowels O. K. Walking about ward.

These two cases illustrate the well-known fact that operations for ruptured viscera to be successful must be prompt. In the first case reported, the margin of time elapsed since the accident had very nearly reached the limit of possible successful issue for that particular case. To wait until the diagnosis is certain in these cases is to court disaster. In cases of ruptured intestine, with effusion of septic contents, I feel sure that profuse and thorough irrigation of the peritoneal cavity is a life-saving measure. There has been no time for walling off on the part of nature and hence there need be no fear of spreading the infection; it is an entirely different proposition from a peritonitis from an appendix, in which cases nature has practically always had some opportunity of localizing the process, and irrigation is to be condemned.

I have found that children and adults retain ordinary tap water by rectum as well, if not better, than normal salt solution. Why this should be so, I do not know.

URINARY ACIDITY AND BETA-OXYBUTYRIC ACID DETERMINATIONS IN RECURRENT VOMITING.[*]

By Willard S. Parker, M.D., Boston.

A. H. 7 years old, had a negative family history. She weighed 6 pounds at birth, was never breast fed but given condensed milk. She gained very slowly the first year. At 4½ months she had an attack of vomiting lasting 3 days. At one year a similar attack. Since then she has had 2 attacks each year until 1911 when she had 6 attacks, with an interval between of 6 to 8 weeks. She had already had several attacks in 1912 when seen in November of that year.

[*] Read at a meeting of the New England Pediatric Society held December 4, 1914.

She had always been very constipated and has had almost no natural movements since birth, receiving an enema or cathartic almost daily. The stools were always hard and at times contained much mucus. On one occasion she passed a string of mucus 1½ feet long. There has never been any diarrhea nor were the stools ever white or clay colored. The diet had been a very reasonable one, containing little milk or cream but at times considerable butter. The feeding of fat seemed to precipitate some of the attacks. The mother thought the child nervous; she was very active.

A typical attack was as follows:—The child first complained of her throat being sore, though no evidences of inflammation were ever discovered. At this time she was usually slightly yellow. After several hours the sore throat disappeared, vomiting came on and lasted from 3 to 6 days. She was nearly always very constipated just before an attack and the bowels were made to move with great difficulty. The physical examination was as follows:—Flesh firm, color good, weight 42 pounds, about 6 pounds below normal. There was no other abnormality except that the abdomen was slightly distended and the liver enlarged; the liver dullness extended to the upper border of the fifth rib, the edge was felt 5 cm. below the costal margin.

The urine was normal and had a specific gravity of 1010.

The stool showed a moderate excess of fat as soaps.

The Roentgen examination of stomach and intestines was as follows:

The first plate two hours after the bismuth meal showed a dilated stomach reaching to the top of the sacrum. The second plate 6¾ hours after the bismuth meal showed the bismuth in the ileum, jejunum, and cecum. Normally, all the bismuth should have reached the cecum by this time. The third plate, 30 hours after the meal showed, in spite of an enema having been given, a large mass of bismuth in the cecum, some in the transverse and descending colons and in the sigmoid. Normally, there should be no bismuth in the cecum at this time.

Bismuth Enema. The bismuth travelled to the junction of the ascending and transverse colon where it stopped short. At this point there was considerable dilatation, as there was also at the cecum which was distended with gas. Normally, the bismuth should fill the cecum.

The conclusion from these findings was that there was some degree of obstruction in the region of the cecum. That the attacks of vomiting depended wholly, or in part at least, on this condition seemed probable.

The child was put on a rational diet for observation. About one week later she had a severe attack lasting four days, during which she vomited from eight to fifteen times daily. The bowels were moved with difficulty. The abdomen showed for three days considerable masses of fecal material in the right lower quadrant. As soon as enemas and cathartics succeeded in evactuating these masses the vomiting almost immediately ceased. Sodium bicarbonate was given in doses of five grams in twenty-four hours.

Very little of the sodium bicarbonate given by mouth during the attack was retained so it was given by rectum, 2 drams in eight ounces of water three times in 24 hours. Only a part of this was retained and as the urine remained acid until near the end of the attack, it apparently was not rapidly absorbed. Water, orange juice and cracked ice were given by mouth. The vomiting ceased on the fifth day of the attack.

The following are the urinary findings:

Day of Attack.	24-hour Amount cc.	Spec. Gravity.	Reaction to Litmus.	H + 10-7.*	Titratable. N/10 Acid	NH_3 Grams Nitrogen.	NH_3 N/10	Acid + Alk.	Alk. Given. Gms.	Aceton and Diacetic.	B-Oxybutyric Acid Per Cent.	B-Oxybutyric Acid Gms.
2	360	1021	Acid	5.7						++	1.5	5.4
3	530	1022	Acid	5.1	307.	.640	460	767	5.0	++	1.7	9.0
4	620	1024	Acid	5.3	372.	.794	567	937	8.5	++	1.7	10.5
5	480	1026	Acid	7.2	52.	.757	541	593	4.5	++	1.4	6.7
6	820	1018	Acid	7.4	0.	1.14	814	914	1.5	+	0.9	7.2
7	510	1016	Acid	8.3		.263	188	188	0.0	+	1.0	5.0
8	950	1014	Alk.	8.3	Alk. 28.				0.0	0	0.0	0.0

Hydrogen-ion concentration by the Palmer-Henderson Method.
Ammonia by the Folin Method.
Beta-Oxybutyric acid by polariscope.

The presence of the acetone bodies in large amounts, the high acidity of the urine and increased ammonia excretion are all evidence of a true acidosis. The increased ammonia is the reaction usually observed in acidosis and represents the normal reaction of the body to carry off the acids by combination with alkali; the specific gravities in this case are not so high as those frequently observed in the severe cases. The B-oxybutyric acid output is somewhat greater than the amounts found by other observers but there are very few observations on record. Vergeley found 6.8 gms. and 8.5 gms. to the litre. This acid has been found by animal experimentation to be the most toxic of the acid bodies and there is no doubt clinically that the severest cases are those in which are found the less oxidized bodies, that is, diacetic and B-oxybutyric acids.

A review of the recent literature shows the etiology of the so-called primary acidoses still undiscovered. It is of interest that Sedgewick has found the creatin and creatinin of the urine increased before and during the attacks and that Underhill and Steele found in one case a large amount of lactic acid. Mellamby found an increase in creatinin, and also produced acetonuria in a child subject to recurrent vomiting by sudden withdrawal of carbohydrate from the diet and caused its disappearance by feeding glucose.

Clinically Coomby has noted the frequent connection of recurrent vomiting and chronic appendicitis, while Kerley has called attention to the frequency with which adenoids are found in these cases and the relief often obtained from operation. He has also noted that recurrent bronchitis is a condition which often occurs in children subject to recurrent vomiting and that the attacks may be simultaneous.

In the case here reported laparotomy was done. No adhesions were found. There was a general visceroptosis, dilated stomach and cecum. The cecum was so dilated that it was thought best to infold it. The appendix was removed. The child had no more attacks for ten months. The attacks then recurred but not with their former frequency and severity and there have been in the last year only a few very mild attacks. The vomiting would seem then to have been due in large part to the intestinal condition, so we have in this case though a secondary acidosis, a very severe one, and the suggestion is that more of the cases of recurrent vomiting be subjected to roentgen examination of the gastro-intestinal tract.

REFERENCES.

Vergeley: Archiv. Clin. de Bordeau, 1897, Vol. vi, p. 347.

Sedgewick: Studies of Recurrent or Periodical Vomiting. Amer. Journal Dis. Children, 1912, Vol. iii, p. 209.

Langstein and Meyer: Die Acidose im Kindersalter. I. Mitteilung; Jahrb. f. Kinderheilk., 1905, Bd. 61, S. 454.

Mellamby: Eine kurze chemische Studie über einen Fall von cycl. Erbrechen mit einigen Bemerkungen über Kreatinurie und Acidose, Jahrb. f. Kinderheilk., 1912, Bd. 75, S. 252.

Camby: Vomissements Cycliques et Appendicite, Arch. de. Med. des Enfants, 1905, S. 741.

THE SIGNIFICANCE OF X-RAY EXAMINATION FOLLOWING OPERATION FOR CONGENITAL PYLORIC TUMOR.[*]

By Charles L. Scudder, M.D., Boston.

Surgeon to the Massachusetts General Hospital; Associate in Surgery, Harvard Medical School, Boston.

Cases of congenital stenosis of the pylorus may be grouped into four classes:

The first class includes all those cases which died previous to the date of the recognition of the condition by medical men. All those cases were treated medically and were experimentally fed. They all died.

The second class includes those cases which have been unrecognized dating since the time this disease has been understood and carefully studied. All these cases have been medically treated and have died.

The third class includes those cases which are recognized by the attending physician as cases of congenital stenosis of the pylorus, are referred to the surgeon for treatment, are operated upon and die. These cases usually die of starvation because of delay in instituting adequate treatment.

The fourth class includes all those cases which are recognized by the physician, are referred to the surgeon for operation, are operated upon and recover.

The chief difficulty which physicians and surgeons have in dealing with these cases of congenital stenosis of the pylorus is in making a positive diagnosis. One thing which makes the diagnosis difficult is the assumption on the part of the physician that pyloric spasm plays any part in tumor stenosis. I believe that pyloric spasm has nothing whatever to do with the condition of congenital stenosis of the pylorus. All variations in the degree of stenosis and the behavior of cases subsequently proved to be tumor cases may be explained without the assumption of pyloric spasm.

◆

In these cases of congenital pyloric stenosis obstruction at the outlet of the stomach is the important fact. That obstruction in general at the pylorus may be either mechanical or physiological is generally recognized. But so far as any individual baby is concerned having a pyloric tumor, the obstruction is due to the tumor itself encroaching upon the lumen of the pylorus, and is not dependent in any way upon a spasm of the pyloric muscle. Variations in the degree of stenosis may be explained purely upon mechanical grounds: namely, upon the swelling of the mucosa, upon the encroachment of the tumor upon the lumen of the canal, and of the reduplication of the longitudinal folds of mucous membrane normally within the canal, all of which conditions can be proved to be present, and none of which conditions has to be assumed.

Anatomical variations of this sort are competent to account for that which heretofore has been explained only upon the assumption that tumor obstruction is associated with a pyloric spasm. If we can eliminate the idea of pyloric spasm from this group of tumor cases we shall go a long way toward reaching a quick diagnosis with shorter periods of experimental feeding and consequently such tumor cases will receive proper surgical treatment at an earlier date and the lives of more babies be saved.

---

[*] Read at a meeting of the New England Pediatric Society, December 4, 1914.

Dr. H. M. Richter (personal communication) of Chicago has had 11 cases of congenital stenosis of the pylorus examined by means of the x-ray bismuth meal by Dr. Case of Battle Creek, Michigan. Ten of these 11 cases were tumor cases. In each case there was demonstrated a complete closure of the pylorus and in each case bismuth passed through the stoma and not through the pylorus. These x-ray examinations were made from 7 days to 3½ years following the operation of gastro-enterostomy.

In one case of Richter there was no tumor but a spasm of the pylorus. A posterior gastro-enterostomy was done and after three years had elapsed the x-ray examination showed the bismuth passing both ways, that is, through the pylorus and through the stoma. This is a very significant case compared with the true tumor cases.

Dr. W. A. Downs of New York has had examinations made by the x-ray bismuth meal of 6 cases of congenital stenosis of the pylorus subsequent to operation. Invariably in these 6 cases the bismuth passed through the stoma and none went through the pylorus. The period of time which had elapsed from the operation to the x-ray examination was from four months to two years in these six cases.

Dr. James L. Mitchell of Washington, D. C., reports one case in which a bismuth examination 2½ years after posterior gastro-enterostomy was done for a pyloric tumor. This report showed that no bismuth passed through the pylorus, but that all went through the stoma.

Four years ago in a paper published in *Surgery, Gynecology and Obstetrics** I recorded the interpretation of x-rays taken by Dr. Walter J. Dodd following a bismuth meal in nine of my own cases of congenital stenosis of the pylorus that had had the operation of posterior gastro-enterostomy. These were among the first x-rays to be taken of such cases. In every instance the bismuth meal was seen to pass through the stoma and nothing was seen to pass through the pylorus. These x-ray examinations were made from one to eight years following operation. I am now having a larger series x-rayed.

Here then are well-authenticated reports of an x-ray bismuth examination in 26 cases of proved congenital stenosis of the pylorus following posterior gastro-enterostomy. All of these cases were observed by skilled physicians, surgeons and roentgenologists. The returns from these 26 cases are uniform. In each case the pylorus was obstructed, in each case the stoma was patent and was the only exit for the bismuth meal from the stomach. From this evidence it is fair to conclude that the tumor seen at operation continues to obstruct the pylorus.

In this connection it is important to recall the classical case of Morse-F. T. Murphy-Wolbach, of a child who had a congenital pyloric tumor obstructing the pylorus, in which a posterior gastro-enterostomy was done. The child died seven months subsequently from a cause unconnected with the stomach. At the autopsy the tumor seen at operation was found unchanged.

To this original observation may be added the case of Grulee and Lewis of Chicago. (Personal communication. To be reported by Dr. Lewis in detail in the *Jour. of the A. M. A.*) The child was operated upon shortly after birth because of a pyloric tumor. Nine months later the baby died of pneumonia. At the autopsy the tumor was found to be present blocking the lumen of the pylorus. To this report may also be added the record of Case 14 in Dr. Downs series. This child, Case 14, died of diphtheria three and one-half months after posterior gastro-enterostomy for a tumor of the pylorus. The tumor in this case was of the same size as at operation and was still obstructing the pylorus.

There are, therefore, three authentic cases in which the pylorus tumor discovered at operation has been seen from three to nine months following a plastic operation. These facts taken with the postoperative x-ray findings in the 26 cases recorded above afford a reasonable basis for the conclusion that the pyloric tumor persists and does not tend to disappear. The recognition of the persistence of the tumor in congenital pyloric stenosis is important.

a. The tumor alone with the mucous membrane changes is an adequate cause of the obstruction in all its phases, and it is unnecessary to imagine a pyloric spasm associated with the obstructing tumor.

b. The surgical treatment of these cases is without any question the only permanently effective treatment.

c. The postponement of the operation with the idea, now so prevalent, that the hypothetical spasm will let up and the tumor disappear and the child recover is unjustifiable.

d. A baby having tumor obstruction will always have tumor obstruction.

e. The omission of the hypothetical pyloric spasm from any consideration in these cases will result in earlier adequate surgical relief.

---

* September, 1910.

◆

SOME STUDIES IN FAT INDIGESTION.*

BY CHARLES HUNTER DUNN, M.D., BOSTON.

Abstract: The cases studied at the Infants' Hospital were those which showed a marked intolerance of cows' milk fat, manifesting itself by showing signs either of failure of fat absorption, or of failure of digestion, or of both. These cases showed a variety of clinical features, the chief sign of intolerance being the appearance of excessive fat in the stools. The typical feature of fat indigestion is summarized in these words: Inability to gain weight without fat, and inability to gain with it.

---

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

The points studied, and the conclusions reached, were the following:—

1. Are there any striking predisposing causes for fat indigestion? Chronic disease, particularly tuberculosis, was found associated with these cases with marked frequency. In the study of previous feeding, overfeeding with carbohydrate was found to be the history, rather than overfeeding with fat. The effect of long continued overfeeding and its consequent fermentation may be the primary injury, causing a failure in the power of digesting fat, which later comes to dominate the picture.

2. Can we successfully compensate for deficient power to digest and absorb fat, by increasing carbohydrate or protein, and if so, to what extent? The answer to this question is, to a very slight extent. The three elements, fat, sugar, and protein, must bear a fairly constant proportion one to another.

3. Is the micro-chemical examination of the stools for fat a reliable guide to the feeding of these cases, and if so, to what extent? The conclusion was that it is indispensable for the proper management of these cases. Nevertheless, the continued presence of excessive fat or soap in the stools is not incompatible with prolonged gain in the weight and freedom from clinical symptoms of indigestion. There is always some danger, where excessive fat is present, of a sudden "blow up," with clinical symptoms and rapid loss of weight. Free fat is always a danger sign.

4. What are the relative values of maltose and lactose as the carbohydrate element in these cases? In general, babies who cannot gain weight on a certain percentage of fat with lactose, can gain better on the same percentage of fat when maltose is substituted. As to whether the use of maltose actually increases the power of digesting and absorbing fat, the evidence is contradictory, and not conclusive.

5. What are the relative values of precipitated casein, and unmodified protein in these cases? This point is interesting in connection with the theories of the possible rôle of the cow's salts in fat indigestion. The evidence was contradictory and not conclusive. Fat "blow ups" occurred with the same quantity of fat, in cases where both forms of protein were successively used. Some cases did better with precipitated casein, but in no case did its use show clear evidence of increasing the power of digesting and absorbing fat. The gain appeared to come from the fact that in some cases precipitated casein is better digested than unmodified protein.

6. What is the value of lactic acid milk in these cases? The evidence on this point was not sufficient to permit the drawing of any conclusions.

The following is a summary of the ideas now held at the Infants' Hospital as to the treatment of these severe cases of fat indigestion.

The milk modifications used must be low in fat, average in carbohydrate, comparatively high in protein. The extra sugar should be maltose. A certain number of the milder cases will do well on this treatment. Severe resistant cases are those which cannot gain on a low quantity of fat, and cannot tolerate an increase. A large number of cases are so severe and resistant that they can only be saved by human milk. Breast milk will save most of these cases, even the severe ones, if used in time. It should always be used in resistant cases, whenever it can be obtained. Even a little breast milk is of value and may save a case which would otherwise be fatal. After a period of breast milk feeding, many cases are found no longer severe and resistant to artificial feeding. If breast milk cannot be obtained, the feeding is very difficult and the outcome uncertain. Excessive increase of carbohydrate or protein will not help these severe cases, and may do harm; I do not believe more than 7% carbohydrate, or 3% protein, should be given. Whey mixtures are of no help, except sometimes in very young babies, who vomit curds; they may do harm. Giving the protein in the form of precipitated casein may be tried, and may help in some cases. There is not sufficient evidence of its value to indicate its use as a routine.

The only way we have of managing these resistant cases without breast milk, is to keep the fat low, and we must be prepared for a period of loss of body weight, which may be prolonged. If they begin to gain when the fat is increased, it is no sign of permanent improvement; they may go to pieces at any time. Frequent examination of the stools for free fat and excessive soap must be made. In the presence of free fat, or in the continuous or increasing presence of excessive soap, the fat should be reduced, even if the baby is gaining. If a "blow up" occurs when the fat is increased, the fat in the food should be reduced to zero, and then worked up again, slowly. Frequent "blow ups" diminish the tolerance of fat. The best hope of eventually obtaining an increase in tolerance of fat sufficient to permit a gain in weight, is to avoid overfeeding with fat for a long time, even if much weight is lost.

ACUTE AND CHRONIC EMPYEMA.

AT THE MASSACHUSETTS GENERAL HOSPITAL DURING A PERIOD OF TEN YEARS FROM JANUARY 1, 1901, TO JANUARY 1, 1911.

BY WYMAN WHITTEMORE, M.D., F.A.C.S., BOSTON,

Surgeon to Out-Patients, Massachusetts General Hospital; Assistant in Surgery, Harvard Medical School.

I HAVE looked up and traced, as far as possible, the end results of the cases of acute and chronic empyema operated on at the Massachusetts General Hospital during the period of ten years from January 1, 1901, to January 1, 1911.

I realize that statistics may not be of any great importance or especially interesting, but they are of a certain value if they bring out facts that have not been realized before, and perhaps make it possible for better surgery to be done.

There has been a high mortality in the acute cases and a good many of them have become chronic. In going over the records of some 269 cases, and seeing many of those who return in answer to letters sent to them, I have tried especially to find out why the mortality was so high and how it might be reduced.

During this period of ten years there were 269 cases of acute empyema operated on. I have traced the end results in 154 of these. The remaining 115 cases I have been unable to trace; letters have been sent to the patients, then to family doctors, and finally to town clerks, but without success. A large number of patients were foreigners and they have probably drifted to other towns.

Out of the 154 cases that have been traced, there were 54 that died following operation, giving a mortality of 20%. One hundred cases left the hospital alive; 68 are well at the present time. By this I mean that there is no discharging sinus, no bad effects from the operation, and they are able to attend to their regular occupation. Twenty have become chronic. These have a persistent sinus and a cavity with a much thickened pleura, as a rule. The remaining 12 have died since leaving the hospital: one died from an accident, one from diphtheria, three from kidney disease, one from tuberculosis, one from scarlet fever, one from meningitis, one from heart disease; in three cases the cause of death is not known. There has been, apparently, no connection between the cause of death and their empyema.

An autopsy was performed on 30 of the cases that died following operation: 14 died from septicemia, five from pneumonia, three from pyemia, one from peritonitis, two from multiple abscesses of the lung, one from defective closure of the foramen ovale and thrombosis of the left pulmonary artery, in four no definite cause was found. The commonest cause of death was septicemia; the majority being streptococcus septicemia and a few pneumococcus septicemia. I cannot report on any definite cause in the other 24 as there were no autopsies performed on these.

There were 35 cases of chronic empyema operated on during this period of ten years. I have traced the end results in 23: 15 are entirely well; four did not improve by operation, that is to say they have a persistent sinus and are practically chronic invalids; two cases died following operation; two cases have died since leaving the hospital, cause of death not known. Of the two cases that died in the hospital, one had an autopsy performed, the cause of death being adenocarcinoma of the main bronchus and extensive bronchiectasis.

End Results of Operations for Chronic Empyema.

	Number of Cases.	Well.	Not Well.	Died Following Operation.	Mortality.	Died at Home.	Not Traced
Decortication of lung	5	3	1	1	20%		
Excision of ribs							
Pleura curetted	21	7	2	1	5%	2	9
Excision of ribs							
Parietal pleura excised	4	2					2
Sinus explored, curetted, etc	3	3					
Excision of ribs							
New cavity drained	1		1				
Excision of ribs							
Old drainage tube removed	1						1
	35	16	4	2		2	12

Many of the cases were desperately sick when they reached the surgeon, having had a severe pneumonia.

I feel that the cause of many of the bad results was that the diagnosis was not made early enough and that the operation was not done soon enough. The earlier the diagnosis and the earlier the operation the better. I believe that one should operate when aspiration shows the serum to have a good many leucocytes in it rather than wait until it becomes pus.

A good many cases are not drained at the bottom of the cavity so that there is a certain collection of pus that does not drain easily. If in exploring a cavity through the first incision one is not at the bottom, I believe a second incision should be made, provided the patient's condition allows it.

Clinical Department.

REPORT OF A CASE OF CONGENITAL MULTIPLE CYSTIC DISEASE OF THE KIDNEYS IN WHICH ONE KIDNEY WAS REMOVED.

By Francis S. Watson, M.D., Boston.

The case of the patient which is here reported is thought worthy to be published because of the fact that the conditions existing in the kidney which determined its removal were somewhat exceptional, though by no means unknown, and because the patient having multiple cystic disease of the second kidney nevertheless has lived for six and a half years since the operation and has been well enough to work during the larger part of that time.

The patient, a young man twenty-five years of age, was admitted to the surgical service of the Boston

City Hospital in March, 1908, having been attacked four days previously while being in good health so far as he was aware, with severe pain in the left loin and left upper quadrant of the abdomen.

He had vomited once or twice at the onset of the pain but not since. When admitted his temperature was 100.5°, pulse 90, full and regular, tongue coated. He was feeling weak and somewhat exhausted, was pale of complexion, and looked a sick man. Physical examination was negative except with regard to the right side of the abdomen. On this side the abdominal muscles were tense, and there was a decided sense of resistance to palpation. A tumor of large size could be felt occupying the right renal region and extending forward and downward to the border of the ilium. It presented the usual characteristics of a renal tumor. Cystoscope and ureteral catheterization showed the bladder to be normal. The urine drawn from the left ureter showed distinct differences from that which was obtained from the right one. Urine from left kidney had a sp. gr. of 1009, was pale in color, contained a good deal of pus and a considerable amount of microscopic blood. Albumen in larger quantities than would correspond merely to the blood present. No abnormal renal elements; casts or renal epithelium, or crystals, etc., were found. Urea diminished. The urine from the right kidney had a sp. gr. of 1018, was of normal color, and showed a faint trace of albumen. Urea normal in quantity, color normal, solid constituents practically normal, no pus, an occasional hyaline cast. The last named, and the trace of albumen were the only abnormal elements present in the urine from that kidney. The right kidney was palpable and found to be larger than normal, however.

There was no tenderness on pressure over the right kidney or tension of the abdominal muscles, as on the left side of the abdomen.

There was no history suggestive of renal calculus, other than the present attack, but radiographs were taken of both kidneys and ureters, which failed to show the presence of calculus.

Diagnosis. Long-standing hydronephrosis with recently supervening infection of the left kidney and its conversion to pyonephrosis.

Operation. March 30, 1908. The left kidney was exposed by the lumbar incision parallel with the outer border of the quadratus lumborum muscle. This incision was extended later by a transverse cut from its upper end in order to permit the removal of the very large kidney which was found to be present.

The kidney was seen to be the seat of polycystic disease. It was about 22 cm. in length and ten cm. in width. A considerable number of the cysts within view were distended with blood, there were two areas of suppuration visible and in two other parts of the organ's surface a process of gangrene was beginning.

It was felt that the patient's life would be sacrificed if the kidney were allowed to remain, and despite the great probability that the second kidney was involved in the same condition of cystic disease, it was decided to remove the one that had been exposed.

The organ was too large to allow of its being taken out entire, and it was necessary to resect a part of it before this could be done. After being removed, another and larger era of gangrene was revealed nearer the upper pole of the organ, and on cutting the kidney in two a cavity filled with pus and of the size of a turkey's egg was laid open.

Further examination showed that there were two or three of the branches of the renal vein which were plugged by thrombi. The condition of the organ made evident the wisdom of the decision to remove it.

The patient made a rather slow but excellent recovery. Shortly after leaving the hospital the urine from the right or remaining kidney was free from pus and showed only the abnormal elements in the urine that have been mentioned above. The patient has been seen by the writer on four or five occasions since, the last of which was a few days since on Nov. 23, 1914, or six years and nearly eight months after the operation. Despite the fact that the urine now contains pus, is of low specific gravity and has a rather large percentage of albumin, the man's general condition has been progressively better during the past year than at any previous time after the operation. He says, however, that he feels very weak and that during the past four months or so he has had rather frequent recurrent vomiting and loses his appetite and strength entirely during these times; between these attacks he has a good appetite and says he digests his food apparently very well.

The case seemed to the writer to present certain features of interest, chief among them, that while it is always regarded as a grave mistake to remove a polycystic kidney under ordinary conditions, because of the great probability of the actual presence of, or soon to be developed, disease of the same character in its fellow organ of the opposite side, yet there are conditions which may exist in one of the kidneys which so greatly imperil life at a given moment that there is far greater danger in leaving the kidney in which they exist in the body than in taking it out. The chance of prolonging the life of the patient to an important degree under these conditions will be indicated or its contrary be suggested by the evidence of good or poor functional condition of the kidney of the other side at the time when the question of nephrectomy arises. If that kidney is shown to be seriously involved already, it is, of course, obvious that it would be of little or no avail to remove its fellow organ, no matter if its condition was such as to immediately endanger life were it allowed to remain. If, on the other hand, the urinary examinations show that the functional condition of the kidney that is to remain after the operation is still capable, it would be a mistake not to remove its fellow under such conditions as were found in the case here reported.

The other point that is of interest is that a patient in whom the second kidney, that is to say, the one that is not to be operated upon, is functionally good at the time the operation is contemplated, the patient may very probably secure a fairly long term of life, after the nephrectomy and will have his life saved from the danger that is at the time imminent. Moreover, there are a few exceptional cases in which the disease is and remains unilateral, and in these there is no reason why the patient should not after being freed from the danger threatened to life by the conditions in the kidney that is involved in the disease called polycystic, live as long as most people do following the removal of the affected kidney.

When therefore a polycystic kidney is found to present such conditions as those found in this case, namely, areas of gangrene, and collections of pus, whether the cystic condition be very far advanced or not, it should be removed unless the urinary examinations of the product of the opposite kidney indicate that it, too, is too far involved in the cystic process to give a period of life afterward that is not sufficiently important to be considered. Then only would one refrain from doing a nephrectomy on its mate.

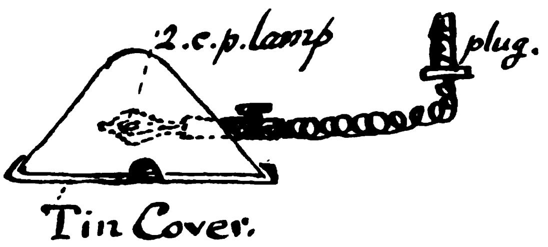
New Instrument

A CHEAP ELECTRIC HEATER.

By Edward von Adelung, M.D., Oakland, Cal.

The following device has been used as a substitute for a rubber hot-water bag for over two years, and has proven more effective, more convenient, and cheaper. So much so that I have decided to put it into print.

The outfit consists of a two-candle power *carbon* filament lamp in an ordinary metal, scoop-like reflector (as sold in all electric stores), with sufficient cord and a plug to connect with a convenient fixture. The reflector is converted into a metal box by a sheet of tin which is cut the proper size to close the open side of the reflector, leaving small ears to be bent over to hold the tin on. To prevent the metal from coming in contact with the skin, the box is slipped into a flannel or cotton bag with a draw-string. The arrangement is made clear by the sketch.



A sixteen candle-power lamp burning twenty-four hours in this box will not light bed clothes, —nor even paper. So that with a two candle-power lamp there is absolutely no danger of fire. Still such a small lamp yields all the heat that one can stand.

Many of my patients find the device a very great comfort. The ease with which one can use it without getting out of bed renders it especially convenient, and gives it a great advantage over the rubber bag. It cannot leak. In sickness it is superior to the water bag or bottle because it maintains its temperature, and is not heavy. When placed over cloths rung out of hot water, and the whole covered with flannel, a poultice is obtained superior to the ordinary poultice, and not requiring renewal. Its many applications in health and in sickness suggest themselves.

Any electric house can put the parts together at a cost not over two dollars. The amount of current used is very small, and the cost of maintenance is practically zero.

Medical Progress.

THE BACTERIOLOGY OF THE GASTRO-INTESTINAL CANAL IN INFANCY. A SUMMARY.[1]

By John Lovett Morse, M.D., Boston,

and

Fritz B. Talbot, M.D., Boston.

BACTERIOLOGY OF THE MOUTH.

The infant's mouth is sterile before birth, but becomes infected from the mother's vagina during birth[2] or from the air soon after birth.[3] The variety of organisms present at this time is relatively small, but as soon as the infant commences to take food the flora becomes more complicated. The number of bacteria does not, however, increase. When the infant takes breast milk, there is an increase in the variety of the organisms, and pathological bacteria may even be found in the mouths of healthy babies.[4] Because of the fact that even the purest cow's milk contains more bacteria than human milk it is reasonable to expect that the mouths of babies fed on the bottle will contain a greater variety of bacteria than the mouths of those fed at the breast, and that the dirtier the milk the greater will be the variety of the organisms. There are, however, no data as to whether this is true or not.

After the eruption of teeth, *i.e.* after the infant is six months old, the number and variety of the bacteria increase,[5] and certain micro-organisms, such as the Leptothrix[6] and fusiform bacteria,[7] which are apparently only able to obtain a foothold in the mouth when teeth are present,[8] appear.

It is an open question as to how important a part the bacteria of the mouth play in the digestion processes in the stomach. It is conceivable that these bacteria, especially when there is dental caries, may do harm. It has not been proven, however, that they do.

BACTERIOLOGY OF THE STOMACH.

The same influences which modify the bacterial flora of the mouth naturally modify that of the stomach. Under physiological conditions the bacteria in the stomach play an unimportant rôle. A description of the individual kinds may be found in the works of Escherich,[9] who was a pioneer in this field of investigation. The smallest numbers are found in the stomachs of the breast-fed,[10] and they remain relatively scarce as long as the digestion is normal. When there is indigestion, there is an increase in their numbers. The greatest numbers are found in cholera infantum.[11]

Bactericidal Powers of the Stomach. There is no doubt that free hydrochloric acid is able to destroy bacteria in the stomach,[12] but this action is prevented to a greater or less extent by the fact that the hydrochloric acid is strongly attracted by the proteins of the food and quickly combines with them, thus becoming inert. Furthermore, since the casein in the milk is rapidly coagulated into curds, the disinfecting action of the hydrochloric acid can only be effective on the surface of the curds, and the large numbers of bacteria which are present in the interior of the curds are not reached by it.[13] The number of bacteria in the stomach apparently depends also on the activity of the gastric motility, for the quicker the stomach is emptied, the fewer are the bacteria which it contains. The converse is also true.

Lactic acid fermentation does not seem to play as important a part in the stomach of the infant as it does in the adult, in whom it occurs only when hydrochloric acid is absent. Lactic acid is seldom or never found in the stomach of the breast-fed, but is frequently found in small amounts in the stomach of infants fed on cows' milk.[13]

Butyric acid fermentation is more common[14] and has been found to occur in the stomachs of atrophic infants in which the secretion of hydrochloric acid and the motility are both diminished. The pasteurization or boiling of milk destroys the organisms which produce lactic acid, but does not kill the spore-bearing bacilli which produce butyric acid. The latter cause the formation of butyric acid from carbohydrates and fat and possibly from protein. Whether butyric acid is formed or not depends, according to Tobler, not on the kind of food present, but on the type of bacteria. This may be in part true, because fermentation cannot take place without fermentative organisms. On the other, however, the food components necessary for fermentation must be present in sufficient quantity to supply the bacteria with fermentable material. The lactic acid bacilli and the butyric acid bacilli are the only organisms which usually play a part in the various processes of acid production in the stomach. The other bacteria which form acid are usually found only in the lower intestinal canal.

BACTERIOLOGY OF THE UPPER PART OF THE SMALL INTESTINE.

The upper part of the small intestine, in comparison with the rest of the digestive canal, is relatively free from bacteria, both in the breast and in the bottle-fed infant. Hess[15] studied the bacteria of the duodenum during life by an ingeniously devised modification of his duodenal catheter. He found that in new-born infants, who had received no food, the duodenum contained very few organisms, only from one to three growing on a plate. The organisms were staphylococci, gram-positive and gram-negative bacilli. Colon bacilli were not found. Infants in the first week of life also had very few bacteria in the duodenum and these were of the same varieties as those found soon after birth. There was more or less similarity between the bacteria of the stomach and the duodenum. The staphylococcus was the organism most frequently found at this age. Hess could not establish any relation between the amount of hydrochloric acid in the stomach, or of bile in the duodenum, and the number of bacteria. The presence or absence of icterus made no difference in the bacteriology of the duodenum in these babies. Cultures from the duodenal contents of older breast-fed babies showed from one hundred to two hundred colonies per plate. Those from bottle-fed infants showed many more.[16]

There is evidence that, while the duodenum may be practically free from bacteria during the intervals between digestion, there is a relatively large population in the small intestine while the food is passing through it.[17] According to Ficker[18] and Moro[19] the flora of the upper small intestine is composed principally of short gram-negative rods (colon bacillus and bacillus lactis aerogenes) with an occasional isolated bacillus bifidus communis, bacillus acidophilus and butyric acid bacillus, and enterococci.

Under pathological conditions there may be an enormous increase in the bacteria in the small intestine. Prolonged fasts are regularly followed by an increase in the number of bacteria,[18] while all processes which cause an inflammation of the mucous membrane of the small intestine result in a diminution of its protective action against bacteria and a consequent increase in their numbers.

Moro[20] believes that there can be an endogenous infection of the small intestine. Such an infection is probably present in most disturbances of nutrition, both acute and chronic. The epidemic of severe diarrhea, associated with the presence of inflammatory products in the stools (blood and pus), described by Escherich,[21] has been used as evidence for this point of view. The infants attacked were all young, their ages varying between four and ten months. The stools contained bacteria which were proved to be, almost without question, "aciduric"[22] or acidophilic organisms. These organisms were probably identical with those which are normally present among the flora of the healthy nursling. Logan,[23] on the other hand, was unable to show that any colon-like organisms from cases with diarrhea showed any greater virulence to guinea-pigs than the same organisms from babies not suffering from diarrhea.

BACTERIOLOGY OF THE LOWER PART OF THE SMALL INTESTINE AND OF THE LARGE INTESTINE.

There are relatively few bacteria in the healthy small intestine down to the lower part of the ileum. There they begin to increase in number, so that when the large intestine is reached they are very numerous. The types of bacteria which are commonly found, according to Kendall, are as follows[22]: The more commonly recognized bacteria are the B. bifidus of Tissier, the Mic. ovalis, the B. coli, the Bact. aerogenes, and the B. acidophilus (Moro). These make up the normal nursling fecal flora. The Bact. lactis aerogenes appears in the upper levels of the tract, that is, the duodenum and jejunum; the Mic. ovalis in the lower jejunum and in the ileum to the ileo-cecal valve; the B. coli and the B. acidophilus in the region of the ileo-cecal valve, while the B. bifidus appears to dominate the ascending and transverse colon. This cannot be accepted without reservation since intestinal bacteriology is by no means so simple as it would appear from the foregoing statement. The remainder of the tract to the anus is relatively poorly populated in relation to the cecum so far as living bacteria are concerned. This is due in part to the considerable degree of desiccation of the fecal contents of the intestines and in part to the accumulation of waste products, which appear to inhibit the development of bacteria.

The character of the bacteria in the large intestine depends largely upon the food,[19] and, since human milk is a relatively homogeneous food, the tendency of the bacteriological flora of the breast-fed is toward uniformity. The bacteriological conditions in the artificially-fed are, as would be expected, less consistent, because there is no uniformity in the food which they receive. The distinctive features of the stools of the artificially-fed are the relative increase of gram-negative bacilli of the colon-aerogenes type and of coccal forms of the Mic. ovalis type. Coincidently, there is a decrease in the number of organisms of the B. bifidus type. The B. acidophilus is relatively more numerous and the B. bifidus less numerous.

BACTERIOLOGY OF THE STOOLS.

The first stools (meconium) of the new-born are sterile, but they become infected shortly after birth. Within eighteen to twenty-four hours after birth, bacteria make their appearance in the stools and the meconium begins to disappear. The kinds and the number of bacteria which are found depend largely upon the season and the environment of the infant.[24] This is a period of mixed infection. The following organisms have been found in meconium: B. subtilis, B. coli,[21] B. bifidus, B. putrificus Bienstock, butyric acid bacillus,[16] and enterococci.[25] These organisms undoubtedly gain entrance to the intestinal canal through both the mouth and the anus. Meconium is a poor culture medium, probably because of its small water content.

The B. bifidus appears about the beginning of the third day and persists throughout the nursing period. It is an obligate anaerobe (Kendall), gram-positive, and is the most characteristic organism of the nursling's stool. It is apparently independent of the quality of the stool and is present in the classical golden-yellow, homogeneous, pasty stool as well as in those which deviate from this character in consistence and color.[16] Although the B. bifidus dominates the typical field, other gram-positive bacteria can always be found. Other bacteria that have been described in the stools of the nursling are cocci, the B. lactis aerogenes, the B. coli, the B. acidophilus, butyric acid bacilli, the B. mesentericus and the B. aerogenes capsulatus (Welch).

The bacteriology of the stools of the artificially-fed infant is much more complicated than that of the breast-fed. No characteristic type of bacteria predominates, but there is a mixture of bacterial types. Culturally, the same species are found as in the stools of the breast-fed infant. The general picture is, however, apt to be gram-negative in contradistinction to that of the stool of the breast-fed infant, which is usually gram-positive. The B. coli communis and the B. lactis aerogenes are the most numerous of these predominating gram-negative bacteria. A peptonizing bacillus, which is almost always absent from the stools of the breast-fed, has been recorded by Rodella.[26] Passini[27] found three types of butyric acid forming organisms, and isolated peptonizing organisms from the stools of apparently normal bottle-fed babies. The B. putrificus, the most typical example of a purely proteolytic organism, has been found in several cases.

The discussion as to the causes which influence the appearance and disappearance of certain bacteria is of more than polemic interest, since it may lead to some conclusions which will have a practical application. Kendall's[24] view is given as follows: "The intestinal tract is sterile at birth, because the uterine cavity is sterile. The first infection takes place adventitiously. Any organisms which enter by the mouth or through the anus in the bath water, which can exist at body temperature, will find lodgment in the intestinal tract and may temporarily grow there. Many of the bacteria which thus succeed in entering the alimentary canal are spore-forming. During this period the food which is presented to them is largely detritus of fetal origin. At the beginning of the third day, when the breast milk has had a chance thoroughly to permeate the intestinal tract, new organisms appear, organisms which have a definite relationship to the type of food which is presented to them. It will be remembered that breast milk contains essentially 7% of lactose, about 3% of fat, and but 1½% of protein. Carbohydrate is, therefore, the dominant food. It is noteworthy that the organisms which appear in response to this diet are those whose metabolism is intimately associated with the utilization of sugar. These organisms thrive but poorly in a medium from which sugar is excluded. When other foods begin to replace the breast milk there is a definite change in the types of bacteria represented in the intestinal contents. The obligate fermentative bacteria, such as the B. bifidus, are replaced by more plastic forms and the B. coli, which can accommodate their metabolism rapidly to dietary alterations. The B. coli, for example, can thrive equally well on a medium in which carbohydrate is absent. It might appear from this rather definite alteration of types of bacteria in the intestinal tract following changes in the character of the food, that the food alone determined the intestinal flora. This may be somewhat influenced by the intestinal secretions. The essential feature, however, is the very direct relationship between food and bacterial response to it. This recognition of a relationship between food and bacteria in the intestinal tract is important in considering the intestinal flora, for it correlates the metabolism of the flora with the effects which it produces rather than attempting to establish indistinct relations between the morphology of the flora and these effects." These conclusions are supported by the work of Sittler,[28] and Bahrdt and Beifeld.[29]

Further investigations are necessary to throw more light on this subject, which is not as simple as it appears. It seems probable that other factors besides the sugar alone may play an important part in determining the intestinal flora, most important of which is the relation of the sugar to the other food components, especially those which favor putrefaction.[30]

It is interesting to note that Noguchi[31] in studying the growth and characteristics of the B. bifidus was able to transform it in the laboratory from the strictly anaerobic type (B. bifidus, Tissier) to the facultative aerobic type (B. acidophilus, Moro) and back again to the anaerobic type. Logan[23] believes that the B. bifidus of the breast-fed is replaced by the B. acidophilus in the bottle-fed.

The Number of Bacteria in the Stools. The most reliable figures as to the bacterial content of infants' stools are those obtained by Strassburger's method.[32] He found that the bacterial content of infants' stools was as follows:

TABLE.

AGE.	FOOD.	DIGESTION.	PERCENT. OF DRIED STOOL.
2 months	Cow's milk	Normal	11.5
4½ "	" "	"	42.3
5 "	" "	?	35.2
2 "	Human milk	Normal	25.8
1 "	" "	Dyspeptic	61.4

Leschziner[33] found that 2% to 28.4% of the dried stool of the healthy breast-fed infant was composed of bacteria, while from 6.52% to 29.4% of the total nitrogen was derived from bacteria. The newer and more perfect methods of Kramsztyk[34] and Klotz[35] show that the number of fecal bacteria varies with the kind of food and that it is the chemical composition of the food rather than its bacterial content which is of significance.

Escherich[36] has shown that sterilization of the food has very little or no influence on the number of fecal bacteria.[37] Kramsztyk found the smallest number in the stools of infants fed on the breast. He found more in the stools of those fed on diluted cows' milk, and most in the stools of those taking both human and cows' milk. Carbohydrates, especially in the form of malt extract, increase the number of bacteria. Klotz, whose figures are somewhat higher, found that the maximum amount of fecal bacteria in the dried feces is from thirty to thirty-six per cent. He also found the smallest numbers in soap stools. Strassburger, however, found that 60% of the dyspeptic stool was made up of bacteria. Although counting the number of living bacteria is attended with many difficulties, there can be but little doubt that a large proportion of the fecal bacteria are dead.[38]

Pathogenic Bacteria. The typhoid bacillus and the various types of paratyphoid bacilli may be present in the stools of infants under the same conditions as in adults. The same is true of the tubercle bacillus and the cholera bacillus, as well as of other uncommon micro-organisms, such as the bacillus of anthrax.

The various types of the dysentery bacillus are frequently found in the stools of infants. So also is the gas bacillus, as well as other closely allied micro-organisms. When these organisms are found in considerable numbers in association with the symptoms of disease of the intestinal tract, as in infectious diarrhea, they are, in most instances, the cause of the disease. This is also the case when large numbers of streptococci are found in association with fever and diarrhea. The presence of a few of these organisms in the stools in cases of diarrhea does not prove, however, that they are the cause of the symptoms. They also may sometimes be found in small numbers in the normal stools of apparently healthy infants. Under these circumstances they are to be regarded simply as saprophytes.

REFERENCES.

[1] G. Bessau in Tobler: Allgemeine pathologische Physiologie der Ernahrung und des Stoffwechsels im Kindesalter, Wiesbaden, 1914, has been used freely in this article and many of the statements have been taken directly from it. It may be consulted by those who wish to go into the subject more deeply.

[2] Kneise: Sittler quoted by Tobler.

[3] Campo: La Pediatria, 1899, vii, 229.

[4] Doernberger: Jahrb. f. Kinderh., 1893, xxxv, 395.
Herzberg: Deutsch. med. Woch., 1903, xxix, 17.

[5] Noblecourt and Vicaris: Arch. gen. de Med., 1905, 2, p. 3201, ref. Monatsschr. f. Kinderh., 1905-6, iv, 640.

[6] Oshima: Arch. f. Kinderh., 1907, xlv, 21.

[7] Uffenheimer: Münch. med. Woch., 1904, p. 1198 and 1253; Ergebnisse d. inn. Med. u. Kinderh., 1908, 11, 304.

[8] For a more detailed account of the flora of the mouth Kuster

in Kolle Wassermann Handbuch, 2 ed., Jena, 1918, vol. 6, p. 485, may be consulted.

[9] Escherich: Die Darmbakterien des Säuglings, Stuttgart, 1886.

[10] Van Puteren: Ref. Zeitschr. f. Mikroskopie, 1888, v, 539.

[11] Seiffert: Jahrb. f. Kinderh., 1891, xxxii, 392.

[12] Hamburger: Ueber die Wirkung des Magensaftes auf pathogene Bakterien, Inaug. Diss., Breslau, 1890, quoted by Tobler.

[13] Tobler: Ergeb. d. inn. Med. u. Kinderh., 1908, 1, 495.

[14] Cassel: Arch. f. Kinderh., 1890, xii, 175.

[15] Hess: Ergebnisse der Inn. Med. and Kinderheilk., 1914, xiii, 580.

[16] Moro: Jahrb. f. Kinderheilk., 1905, lxi, 870, may be consulted for the literature.

[17] Moro: Arch. f. Kinderheilk., 1906, xliii, 340.
Kohlbrugge: Cent. f. Bakt. Orig., 1901, xxix, 571.
Landsberger: Diss. Königsberg., 1903. Quoted by Kendall.

[18] Ficker: Archiv f. Hyg., 1905, liv, 354.

[19] Moro: Arch. f. Kinderheilk., 1906, xliii, 340.

[20] Moro: München. Gesellsch. f. Kinderh., 1907, xi, 15.

[21] Escherich: Jahrb. f. Kinderh., 1900, lii, 1.

[22] Kendall: Jour. Mer. Research, 1911-12, xx, 117.

[23] Logan: Jour. Path. and Bact., 1914, xviii, 527.

[24] Kendall: Wisconsin Med. Jour., 1913, xii, No. 1.

[25] Sittler: Habilitationsschr., Würzburg, 1909. Quoted by Tobler.

[26] Rodella: Zeitschr. f. Hyg., 1902, xli, 466.

[27] Passini: Zeitschr. f. Hyg., 1905, xlix, 135.

[28] Sittler: Centralbl. f. Bakteriol., 1908, xlvii, 14 and 145.

[29] Bahrdt and Beifeld: Jahrb. f. Kinderh., 1910, lxxii, Erganzungsheft 71.

[30] For a discussion of the action of the different sugars see Tobler.

[31] Noguchi: Jour. Exper. Med., 1910, xii, 182.

[32] Strassburger: Zeitschr. f. klin. Med., 1902, xlvi, 413.

[33] Leschziner: Deutsch. Aerzte Zeitung, 1903, No. 17, 169.

[34] Kramsztyk: Zeitschr. f. Kinderh., 1911, 1, 169.

[35] Klotz: Jahrb. f. Kinderh., 1911, lxxiii, 391.

[36] Escherich: Centralbl. f. Bacteriol., 1887, 11, 633 and 664.

[37] For further literature consult Gerhard Erg. d. Physiol. (Asher-Spiro) 1904, 1, 107.

[38] Eberle: Centralbl. f. Bacteriol., 1896, xix, 2.

Reports of Societies

CLINICAL CONFERENCE, NEUROLOGICAL INSTITUTE, FIRST DIVISION, NEW YORK.

November 12, 1914.

DISSEMINATED SCLEROSIS, MID-BRAIN TUMOR, GENERAL PARESIS. DIFFERENTIAL DIAGNOSIS.

Dr. Joseph Collins presented a case illustrative of the great difficulty which one has at times in disguishing between disseminated sclerosis, mid-brain tumor and general paresis. The patient, a married woman 35 years old, had nothing in her family or personal history worthy of note, save that when she was 20 she suffered from huskiness of the voice for some days. When she was 30 years old huskiness of the voice developed again and she consulted a laryngologist in Norfolk, Va., who, she says, removed a growth from the throat.

The present illness began suddenly in March, 1913, with (1) a sensation of choking. She was unable to speak for five or ten minutes, after which she recovered completely. A week before she had been shocked by the sudden death of a woman who boarded at her house. She was quite well until January, 1914. (2) Suddenly the arms and legs felt numb, stiff, and a sensation of pins and needles in the extremities, and afterward she experienced awkwardness in using the hands. She made no attempt to walk during the attack. This lasted about five minutes. Off and on until October, 1914, she had similar attacks, always with complete recovery in the interim. (3) In July, 1914, while walking on the street the right leg began to jerk so that she could not walk. The jerking gradually extended to the right arm, to the right side of face, the entire right side. She became unconscious about ten minutes after the jerking started and remained so for about three minutes. She was told that the jerking persisted during this time, and that she frothed at the mouth, and made a gurgling sound in her throat. No injury or incontinence. (4) After the attack she could not talk for about fifteen minutes. Since then her speech has been hesitating and it has been difficult for her to articulate words although there is no difficulty in thinking, reading, or understanding words. Speech has gradually become worse since July. There has been no remission in the symptoms. (5) Since the attack in July there have been transient attacks of diplopia. (6) Up to October 1st she had several twitchings of the right leg and arm, without loss of consciousness. During the convulsion she could not speak. After the attacks, she would have violent occipital headache, nausea, and at times vomiting. No scotomata or dizziness. Since August at times she has a sensation of tightness in the left side of the head and a "funny" noise like the noise of the elevated cars. The sound is in the head and not the ear. These attacks last one to three minutes and are not associated with any other symptom.

In September her relations noticed that she swerved to the left when she walked. She had noticed that she laughed involuntarily when talking at times. Also felt as though nose pulled to the left and downward.

On October 12th, she caught a heavy cold and had severe occipital headache. On October 15th while writing the right eye-lid began to twitch, soon the twitching also involved the whole right side of the face. Then she felt as though choking and was unable to speak for about a half hour. Had severe headache for two days and vomited several times.

On Oct. 19th she again had a severe headache and was unable to talk for about ten minutes.

On Nov. 7th after returning from a walk, the left leg suddenly began to jerk. The attack lasted five minutes. After this she had another severe headache. Later in the day she was unable to talk for about a minute. During the past year she has lost 15 lbs.

Physical Status.—No evidence of trophic disturbances. The station is slightly unsteady but there is no distinct rombergism. Gait is quite normal. There is a moderate, but distinct, lessened innervation of the right facial muscles of the supra nuclear type. The tongue is protruded slightly to the right. The palate rises normally on volition. Laryngeal examination negative. No musclar weakness of the arms and legs. There is a slight "intention" tremor of the right hand, which varies in degree from time to time. On two occasions, a slight twitching of the muscles of the right lower face was present when showing the teeth. There is no distinct manual or pedal incoördination. The deep reflexes are all quite active. The right knee jerk is slightly more active than the left. Babinski, Oppenheim, Gordon and Hoffman phenomena are absent. There is no ankle or patellar clonus. The right abdominal and epigastric reflexes are normally active; the left absent. No weakness of the extrinsic muscles of the eyes. There is a slight transient nystagmus on looking upward. The pupils are equal, 3.5 mm. in diameter, rather irreguar, and react sluggishly to light, but they react. The fundi are normal.

Examination of the hearing apparatus by Dr. E. B. Dench shows a hyperaesthesia of the auditory nerves to the galvanic tests and failure of the normal overpointing reaction on the left labyrinth is stimulated with cold water.

Sense of position, pain, touch, temperature, reaction time and localization is normal throughout. No stereognosis. The speech is syllabic, staccato in type: both in spontaneous speech and repetition of test phrases.

The Wassermann reaction of the serum and cerebrospinal fluid is negative. The latter shows two cells and an excess of globulin. The urine and blood are negative. Mentally, the patient shows nothing abnormal except moderate excitability and emotionalism which is probably constitutional.

In brief then this patient's conspicuous symptoms are:—

1. Dysarthria.
2. Recurrent headache associated with nausea and at times with vomiting.
3. "Attacks" attended with some perturbation of consciousness, topical paresthesia (side of face, foot, leg) and involuntary movement of the extremities of one side of the body, not always the same side.
4. Transient diplopia.

The physical signs are apparently most trifling:—

1. A very slight difference of innervation of the sides of the face, the right side being slightly sluggish.
2. Unelicitable abdominal reflex on the left side, and
3. Pupils that are sluggish in their response to light.

The speech disturbance is "typically," one may say, that of general paresis. She stumbles over words, elides and slurs syllables, and her articulatory efforts are slow. This disorder of speech is variable in intensity. It is always accentuated after a so-called attack, and when she remains for a considerable time free from attacks it is much less noticeable. Another sign of general paresis is the condition of the pupils. They are slightly irregular and sluggish, though responsive to light, a condition which one who examines many patients with syphilitic nervous disease is apt to call "beginning Argyll-Robertson pupils." Yet despite these two signs we must without reserve rule out general paresis because of the absence of any disturbance of the mental content, and the absence of the Wassermann reaction in the blood serum and cerebrospinal fluid.

On first thought the most probable diagnosis is disseminated sclerosis. The speech disturbance, the transient attacks of diplopia, the absence of the abdominal reflex on one side are all suggestive of this disease. Moreover the patient is of the appropriate age for the occurrence of disseminated sclerosis. But in view of the other striking symptoms which she has, namely the headache, nausea and vomiting, the transient regional parethesias of "an explosive nature," the periodic twitchings or convulsions of the extremities of one side of the body and the two attacks of loss of consciousness followed by what must be described as a queer mental state, the diagnosis of disseminated sclerosis must be abandoned. This leaves us in the position of being obliged to make the diagnosis of mid-brain tumor. As a matter of fact aside from the absence of choked discs or papilledema the clinical picture which she presents is fairly typical of mid-brain tumor, if any clinical picture can be said to be "typical" of tumor in this location. It need not astonish us that the optic nerves are not involved in this case, granting that a tumor exists. There are many cases on record of mid-brain tumor in which papilledema did not develop until late in the course of the disease. The occurrence of choked disc depends entirely upon when the tumor produces sufficient increase in intracranial pressure to cause an optic neuritis.

The attacks which she has, must, I think, be interpreted as lower level fits, using the term which Hughlings Jackson introduced to describe a form of convulsion caused by irritation of the motor pathway below the level of the corona radiata. As a matter of fact the onset of her symptoms, the course of the disease, or what may be called the behaviour of the symptoms, and the grouping of the symptoms at the present time, are all more in keeping with the diagnosis of mid-brain tumor than with any other diagnosis. In view of the fact that some tumor growths are influenced by arsenic I propose to give her salvarsan and to show her at some future conference.

Dr. T. J. Keyser presented a case of

HERPES OF THE 5TH NERVE OCCURRING IN A WOMAN OF 54, SUFFERING FROM DIABETES.

The patient came to the dispensary on Nov. 9 complaining of severe paroxysms of pain in the right shoulder and right side of neck, face and head.

The present illness began two months ago with severe toothache. Two weeks later she went to a dentist and had the right lower second molar tooth filled. Immediately after this the pain became very severe, extending over the distribution of the lower branch of the trigeminal nerve. The right side of the face became swollen and tender. Gradually the pain extended to the shoulder, neck and head. It occurred in paroxysms lasting two to three minutes. She describes the pain as of an intense burning character. It begins in the shoulder and extends to the face and the head. It is so severe that she screams with pain, and hypodermics of morphia are required to relieve her.

Three weeks ago a herpes suddenly appeared over the right upper chest, shoulder and right side of neck. The burning pain continued as before. On Nov. 8, the offending tooth was pulled. The doctor who was treating the patient before admission found sugar in the urine.

The patient is rather emaciated and very pale. However the mucous membranes are of a good color; there is a moderate general muscular weakness. There is evidence of recent herpes over the right shoulder, the chest to the level of the second rib, the back to the level of the second thoracic vertebrae, the right side of the neck and posterior aspect of the ear. The face showed no involvement. There seems to be some hypersensitiveness to cold and touch over this area. However, the patient is very apprehensive and often complains before she is touched. There is a marked tenderness of the greater occipital, 1st and 2d thoracic, radial and median nerves and the brachial plexus on the right. There is marked pyorrhea alveolaris, but practically no dental caries. Hearing not defective.

There is no tremor or incoördination. The knee jerks are obtained only on reinforcement, the ankle jerks are absent. The deep reflexes of the arms are present and equal. Babinski and Hoffman phenomena do not exist. There is no disturbance of sensation and postural sense. The patient complains of pain on pressure over all of the muscles and nerves of the lower extremities. This tenderness varies a great deal on different examinations.

There is evidence of consolidation of the base of the left lower lobe, the percussion note is dull, the breath sounds are high-pitched, bronchial with prolonged expiration and bronchophony. A few moist râles are heard at both bases.

The serum Wassermann is negative. The urine shows ½% of sugar, a trace of acetone and albumen. Blood pressure, 160. The blood examination is negative except for a leucocytosis of 86%.

The case is of interest in that the onset of pain over the distribution of the lower branch of the right trigeminal nerve following caries of a tooth suggests an ordinary trifacial neuralgia. However, the further extension of the pain over the distribution of the right cervical and first and second thoracic nerves, the development of herpes, and the tenderness of the nerve trunk and calves, recurring in a patient with diabetes, suggests rather the diagnosis of a mild multiple neuritis of diabetic origin.

PERIODIC RECURRING TIC RESEMBLING EPILEPSY.

Dr. J. M. Stephenson presented from the Second Division of the Hospital a young woman 18 years old, born in this country of Swedish parentage. Father is 46 years old, living and well; mother 58, living and well. Patient is the seventh of nine children, of whom five died in infancy. Her mother first married at 25 years; first child died at one week; second child, born one year later, now 31 years old, apparently normal; third child born two years later, died at three years, convulsions; fourth child, girl, living and well, now 27 years old; fifth child died at three years, convulsions "teething"; the father of these children died of grinders' consumption. The mother married again at the age of 37, her husband being 25 years old at the time. First child of this marriage, a girl, living and well, now 21 years old; seventh child, the patient; eighth child still-born 2½ years later; ninth child died at two years(?), was never well.

Gestation apparently normal; labor relatively normal; low forceps, 10 pounds. Breast fed one year; talked and walked at one year; strong and healthy during infancy. Whooping cough and measles at 1½ years without apparent sequelae; spinal meningitis(?) 1903 (at the time of an extensive epidemic of actual spinal meningitis in this vicinity) starting with bunches in the neck, followed by pain in the head and back; in bed for many weeks and very sick. Since then she has never been as strong and well as previously. Sometime later she had influenza with inflammation in one ear, which broke and ran for some time and left her a little deaf. Later she had neuralgia about the heart with sinking spells, which usually consist in the occurrence of black and red bunches on the heels, then on the palms of the hands, and then it would go to her head. She would scream and then faint for two or three minutes and lie so still that they could not hear any breathing or beating of the heart. This occurred about twice a day for two weeks, and she was under the care of a physician, who called the condition nervous prostration. He made her get up and walk around, and after that she was all right. Three years ago, at the age of 15½ years, she had inflammatory rheumatism with swelling and pain in her legs, hands and neck, and was very sick for one week. One year ago she had bronchitis. Tonsils were removed six years ago, before which time she had tonsillitis frequently. She has noted some shortness of breath in rapid walking. One physician said she had anemia; another physician said she did not have any anemia. In January, 1914, she weighed about 140 pounds, but had lost quite a little weight during the previous few months. Menses began at 12 years, were regular, and did not cause much discomfort. She started to go to school at five and was in the eighth grade at the age of 14, when she had to stop on account of the present illness. Since then she has been at home in a small village with her father and mother, and helps about the house.

Since August, 1910, she has had "spells," occurring at intervals ranging from three or four days to one or two months, with a single long interval of 10 months three years ago. I saw her first in January, 1914, and since then these attacks have occurred on the following dates: Jan. 14 and 30 at 9 a.m.; Feb. 26, 10.30 a.m.; March 18, 4.05 p.m.; April 17, 2.35 p.m.; May 18, 3.45 p.m.; June 16, 12.40 p.m.; July 12, August 17, Sept. 16, Oct. 17. During July and August the menses occurred at intervals of two weeks.

The patient describes her condition as follows: "I have these spells: a funny feeling comes in my stomach and chest, and then it twitches me all over. The left side is the worse. They last more than half an hour. I am awfully weak after it and twitchy for several days. My hands and legs shake. I do not lose consciousness and I know what is going on and can talk. I fall down because I can't walk, because my left ankle goes right under me. I usually bite my tongue."

The sister states that the patient usually introduces the attack by saying, "It is coming, mother," and then falls down if she is not caught. Her fingers twitch and close up; she turns her eyes up and her feet in. The next night she shakes the whole bed, but may sleep for a minute of the time, and then wake up with a jump. Afterwards she is very tired for several days.

Patient entered hospital Nov. 7, 1914. Examination revealed a well nourished young woman; musculature well developed; no atrophies; station good; gait good; no ataxia or tremors at rest or on intention.

Pupils round, regular and respond well to L. and A. Mobility O. K. No contracture of fields nor corneal reduced sensibility. Eye report by Dr. Holden, slight astigmatism.

All reflexes were present, fairly active and equal. Plantar responses flexor. Abdominal and epigastric present and equal. Sensations intact. Wassermann negative. Blood showed 83% hemoglobin. Urine negative. Blood pressure ranged between 110 and 122.

On Nov. 10 had an attack described by Dr. McRoberts, the house physician, as follows: "She lay on the bed with legs drawn up, partly on back and partly on right side. Left arm and leg jerking in irregular violent clonic spasms. Occasionally the left side of mouth would twitch and the right arm and leg shook slightly; mostly from the general motion the body was thrown into by the left-sided spasms.

"She complained of pain in her neck and hip, and asked that something be done for her. She was perfectly conscious throughout the attack, which persisted violently for nearly forty minutes, and in a measure for several hours later.

"She responded to all questions and opened her mouth for examination of throat. Sensation remained equal in both sides of body according to patient's statements. No corneal or pharyngeal anesthesiae. No loss of stereognostic sense in convulsed hand. Pupils responded to light and the accentuated knee jerks were equal. Left ankle jerk more difficult to obtain on account of resistance of muscles, but when obtained was equal in response to right. Plantar response flexor. No clonus.

"No opinion of abdominal reflex can be given on account of continual spasm. No incontinence. Tongue could be protruded and maintained out for examination easily. No headache, no confusion, no increase in severity after commencement of spasm.

"The spasm involved mostly the pectoral and shoulder muscles. The fingers would open and close irregularly and easily flexible with exception of little finger, which was maintained throughout (almost) in tonic contraction."

Patient continued to have the spasms until about ten that evening, when they are said to have disappeared. However, the next morning they were present, and the first impression made was that of hemichoreiform movements. But upon examination the movements were seen to be not the aimless movements of the chorea, but rather the overaction of volitional impulses. The muscles mostly involved were those of the left shoulder, the movements causing adduction and elevation of the arm. At the same time there was irregular flexion and extension of the fingers, with an occasional contraction of the abdominal muscle and diaphragm. The movements at times were slow, again sudden, causing a quick jerking of the arm inward and upward. Attempts to control the movements aggravated them but distraction of attention somewhat lessened them. The spasms have continued, but are gradually lessening in severity. However, upon close observation, you can observe them now.

The question of diagnosis is an interesting one. Three possible diagnoses present themselves, viz.: Jacksonian epilepsy, including also the so-called basal ganglion explosions; hysteria; and tic. It is hard to conceive that one could have seizures so frequently over a period of many years of a cortical or basal origin without showing some organic manifestation, such as increased reflexes, etc. These being absent, I think we can eliminate an organic etiological factor.

The diagnosis of hysteria is always a dangerous one and in my opinion should never be made unless there is at least one of the stigmata of hysteria, not one of which is present in the patient.

By a process of elimination, I arrive at the diagnosis under which I desire to present this case, viz., periodic recurring tic. Here we have a patient of neuropathic constitution, indicated by her previous history, upon which field such maladies develop. We have a young girl who for the past year has had regular monthly "spells," so regular that the family can almost predicate the date. The spells are always of a similar nature, consisting of irregular contractions, involving mostly the shoulder girdle, movements being more those of overaction of normal impulses, aggravated by attempts to control, lessened by distraction, showing none of the findings produced by organic disease of the central nervous system, and none of the stigmata of hysteria.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING OF WEDNESDAY, NOVEMBER 4, 1914, AT 8 P.M.

The President, DR. JAMES C. WILSON, in the chair.

PAIN AND TENDERNESS IN DISEASES OF THE SPINAL CORD AND THEIR SURGICAL TREATMENT.

DR. CHARLES A. ELSBERG, New York: The tremendous development of abdominal surgery has brought with it a great advance in our diagnostic acumen. Strange to say, however, little attention has been given to the neural origin of abdominal pain. The abdominal symptoms of locomotor ataxia are well known, yet in not a few cases operations have been performed for supposed gastric disease when the real trouble was gastric crises in the course of tabes. During the past five years two patients have been sent into my service in one of the hospitals in New York with the diagnosis of acute appendicitis. In both instances the patients had Pott's disease with irritation of spinal nerve roots, and areas of skin and muscle tenderness in the right iliac region. I have records of three patients in whom various operations had been performed who were finally found to have a spinal tumor or a neuritis of the nerves of the cauda equina. Another patient operated upon for supposed gangrene of the toes with severe pain shooting down the leg was finally relieved by an operation for spina bifida occulta. To understand the distribution of painful symptoms in the extremities it is of value to remember the anatomy of the spinal nerve roots. There is a marked difference between the cervical and upper dorsal, and the lower dorsal and lumbosacral posterior roots. In the latter the nerve fibres which originate from the cord soon unite to form one bundle,—the posterior nerve root; in the former, however, the bundles of fibres which originate from the cord along a line from one to one and one-half centimeters in length do not unite to form the posterior root until near to where they perforate the dura. As a result a tumor may press upon some of the nerve bundles without compressing the entire spinal root. This anatomical arrangement enabled us to understand the early symptoms of a patient from whom I removed an extramedullary tumor of the spinal cord between the seventh and eighth cervical segments, whose first and for a long time only symptom was a painful pin and needle sensation in the index finger of the right hand. At operation the tumor was found to have pressed upon only the lower nerve root bundles of the seventh cervical posterior root. From several cases of this kind I feel justified in making the statement that of the nerve bundles that make up the seventh cervical posterior root, the lower supply the index finger and the upper the thumb,—an interesting fact for finer spinal localization. There are many abdominal disturbances that patients suffer from which are but little understood. In my last 100 laminectomes for spinal disease I have performed six operations on patients who had been treated for long periods for abdominal symptoms. In every case of indefinite abdominal pain and tenderness it is advisable to make certain that we are not dealing with a cutaneous hypersensitiveness, which so often simulates real abdominal tenderness. Before doing a root section for gastric crises I believe there should always be given a preliminary intraspinal injection of stovain. By this means will be gained a fair idea of the prospect of success from division of posterior roots. The operation of Spiller and Martin for severe pain of peripheral or of spinal origin is based upon a sound anatomical and physiological foundation and the future for the operation is a very bright one. The question of whether the spinal cord is sensitive to pain, or like the brain, insensitive, is a subject to which I have been giving some of my time and attention. I have observed patients upon whom lumbar puncture was done, others upon whom spinal operation was done under local anesthesia. Finally, I have attempted to learn something on this subject in the course of some experiments upon animals. Other attractive subjects for study are the pathological mechanics of spinal compression, and a more intensive study and comparison of the sensory and motor disturbances which occur on each side of the body when the spinal cord is pressed upon by a new growth or as a result of an inflammatory or traumatic lesion.

Dr. Charles W. Burr: In a patient seen some years ago the only symptom present was diffuse pain in the right arm. Later there was slight wasting in the muscles around the thumb. The pain was later replaced by painful anesthesia accompanied by marked wasting and gradually increasing palsy in the whole arm. After some time death ensued and at post mortem there was found in the cervical region a long flat growth that had entered the nerve roots, first the posterior, causing only pain and then the anterior, causing pain and wasting. Had we but known the cause of the trouble, operation would have saved her a great amount of pain and probably her life. The more we learn of the distribution of pain in reference to the nerve roots affected, the more we shall be able to do in all of these cases.

Dr. Charles H. Frazier: My experience in operating for the relief of pain consequent upon spinal lesions has been confined to cases of tumors operable and inoperable of tabetic crises, and of persistent neuralgia following injuries to the brachial plexus. I think it is too commonly supposed that pain is a constant and conspicuous symptom of spinal tumor referred to the peripheral distribution of the segment involved. A number of cases of spinal tumors have been observed in which throughout the course of the lesion there was absolutely no pain. The widely varying results of rhizotomy would seem to throw some doubt upon the present conception of the pathways of afferent impulses and to suggest the possibility of the ventral roots having some part in the carrying of afferent impulses. Such hypothesis has been already advanced by Kidd. Whenever possible, a therapeutic test should be applied before operation in order to determine whether interruption of the sensory impulses does not relieve pain. Spiller's suggestion of resection of the anterolateral column of the cord is a most valuable one and appeals to me particularly in cases of uncontrollable pain of the lower extremities and more especially because the operation does not necessitate the removal of as many laminae of the spine as would be necessary to cut the required number of lumbar and sacral roots. In the limited number of root resections for pain in my own clinic there have been no fatalties, but in a larger series, performed by a number of surgeons, the mortality rate has been estimated at 10%. This I believe is too high and that the risks of the operation should be materially reduced. The low rate of mortality in my own experience with laminectomy I attribute chiefly to intratracheal anesthesia and to the use of the stovain block.

Dr. Elsberg: I am not very enthusiastic about cutting posterior spinal roots in the treatment of the crises of tabes. Professor Forster states that the only way to get a fairly good result is by an enormous laminectomy, cutting from the fourth or fifth dorsal down to the twelfth, and that even then the result is not certain. I have seen temporary benefit from the injection of stovain into the spinal canal. Laminectomy is an operation in which the mortality should be very small and one which a surgeon after a little experience should be able to do easily. In 98 successive cases we have had no mortality.

THE PATHOLOGY OF TABETIC OCULAR PALSIES.

Dr. William G. Spiller: The causal relation of syphilis to tabes and paresis is now fully accepted and gradually the view has gained headway that tabes and paresis are really syphilitic and not parasyphilitic diseases. This opinion has been greatly advanced by the discovery of Noguchi and Moore of the spirocheta pallida in tabes and paresis. The present status of the syphilis tabes paresis question has been fully discussed by Nonne. It has taken many years to establish what is now known in regard to this matter, and it has become evident that some of the sharp distinctions between tabes and paresis, on the one hand, and cerebrospinal syphilis on the other, need modification. This does not mean that we must drop the designations of tabes, paresis and cerebrospinal syphilis. The ocular palsies of tabes have been regarded by some investigators as nuclear in origin and the syphilitic ocular palsies as of nerve origin. This view may be disputed. I have studied by microscopical serial sections a typical case of tabes with complete internal and external ophthalmoplegia. The ocular nerves and their nuclei were much degenerated, there was considerable round cell infiltration of the pia, but one of the abducent nerves which was less degenerated than the other showed also less round cell infiltration within the nerve. Round cell infiltration is indicative of the intensity of the syphilitic process. This case would throw doubt on the view that tabetic ocular palsies are nuclear.

DISCUSSION.

Dr. Charles K. Mills: Dr. Spiller's paper is another contribution to our exact knowledge of the well known phenomena of tabes and another contribution to assist us in bringing together so-called parasyphilis and syphilis, or rather to break down the artificial partition which has been reared for so many years between these so-called different specific diseases. We can understand some of the well known early phenomena of tabes better by recognizing the position which Dr. Spiller takes regarding these ocular palsies. As an example, it is not at all uncommon for the diplopia often present in early tabes to rather quickly disappear. I take it that this would not occur were the palsies due to nuclear degeneration.

Dr. Daniel J. McCarthy: Certainly syphilis of the brain and of the spinal cord reacts entirely different to treatment with mercury or salvarsan from tabes and paresis. The accumulation of statistics from salvarsan and other treatment leaves little doubt that, while there is a certain amount of symptomatic improvement, there is little evidence of clear cut cures in tabes, and none in well-developed paresis. There is a group of diseases of syphilitic origin which reacts fairly well to treatment. I would ask Dr. Spiller whether in his opinion tabes still exists, or whether all cases of tabes should be grouped together as spinal syphilis. My feeling is that we have distinct cerebral syphilis which reacts to treatment. Apart from this, paresis on the one hand and tabes do not react, and when once developed are practically incurable.

Dr. Spiller, closing: We recognize tabes and paresis, but we must regard them as truly syphilitic diseases. Tabes is caused by the degeneration of the posterior roots from the syphilitic poison. There are cases in which a positive diagnosis between spinal syphilis and tabes cannot be made. There are also cases in which the diagnosis between cerebral syphilis and paresis cannot be made, and these cases show how close the connection between cerebrospinal syphilis and the so-called parasyphilitic diseases may be. From my study of the effects of syphilis on the nervous system and from a reading of the literature I have formed the opinion expressed in my paper.

* * *

NEW ENGLAND PEDIATRIC SOCIETY.

Meeting of December 4, 1914, Held at the Boston Medical Library.

The President, **Dr. C. A. Pratt**, of Fall River, in the chair.

The following officers were elected for the ensuing year:

President, **Dr. E. M. Buckingham**, Boston, Mass.

Vice-President, **Dr. E. F. Curry**, Fall River, Mass.

Secretary and Treasurer, **Dr. Richard M. Smith**, Boston, Mass.

Member of council for three years, **Dr. Fritz B. Talbot**, Boston, Mass.

The following papers were read:

CHILDREN WITH POSITIVE SKIN TUBERCULIN REACTION.*

By Orville F. Rogers, Jr., M. D., Boston.

TRAUMATIC RUPTURE OF INTESTINE.†

By Lincoln Davis, M. D., Boston.

A CASE OF ACETONURIA.‡

By Willard S. Parker, M.D., Boston.

THE SIGNIFICANCE OF THE X-RAY GASTO-INTESTINAL FINDINGS IN CASE OF CONGENITAL STENOSIS OF THE PYLORUS, FOLLOWING POSTERIOR GASTROENTEROSTOMY.§

By Charles L. Scudder, M.D., Boston.

SOME STUDIES IN FAT INDIGESTION.¶

By Charles Hunter Dunn, M.D., Boston.

DISCUSSION.

Dr. C. W. Townsend, Dr. Davis's paper: I would like to ask Dr. Davis what percentage of mineral matter there is in ordinary tap water. I supposed that pure water was an irritant to the mucous membrane, and the fact that tap water works as well as salt solution would rather indicate that there was some mineral matter in it.

Dr. F. B. Talbot, Dr. Parker's paper: This type of case is extremely interesting, because we know so little about the real cause of vomiting associated with acetonuria. Curiously enough, a number of cases that I have seen with acetonuria and vomiting have all had acetone in the urine as soon as I was able to get a specimen. That does not mean that the acetone preceded the vomiting in all these cases, but there are many cases such as one I have at present in the ward at the Massachusetts General Hospital which has a large amount of acetone in the urine and who has not yet vomited. Associated with the acetonuria and vomiting there is evidence of an intolerance to fat, and my clinical experience has been that the majority of these cases have done better and have had fewer attacks when the fat has been entirely cut out of the diet.

Dr. C. A. Pratt: I have seen two out of six children with this condition die, which is rather a large death-rate, I think.

Dr. W. S. Parker in closing: I had a report very recently on this case which was operated on. General microptosis and a much dilated cecum were found. The cecum was unfolded and the transverse colon suspended. No attacks were recorded for ten months, when they recurred with very moderate severity and nothing like the former frequency; they have diminished from that time on, and the last letter from the parents states that they regard the operation as a complete success as far as cure is concerned. This is rather unusual, as the constipation is still very extreme.

Dr. F. B. Talbot, Dr. Scudder's paper: I agree in general with everything Dr. Scudder has said, but I would like to know how he answers the question which is raised that in the majority of these babies they do not begin to vomit until they are about ten days old. I would like to know how he explains that fact and why, if there is a congenital tumor at birth, we do not have vomiting from birth?

Dr. C. G. Mixter: Last year, I reported before this Society, five cases which we had had in our clinic at the Children's Hospital, which were followed through their ultimate course after operation with x-rays, and which substantiate Dr. Scudder's pictures entirely. Furthermore, we had one case in which, several months after gastroenterostomy, a stomach-tube was passed—it went into the duodenum, then came to a halt, was deflected upward and around, and finally went out through the stoma, after making a complete circle, showing that the pylorus was still sufficiently obstructed to resist the pressure of a stomach-tube above it. I have seen other cases also since that time, the time of course being short, but in all the obstruction has remained.

---

* See Journal, page 161.
† See Journal, page 163.
‡ See Journal, page 164.
§ See Journal, page 166.
¶ See Journal, page 167.

Dr. Scudder: There is no longer any doubt that the tumor in these cases is congenital. There has been a case reported—one that we all have been on the lookout for—a still-born baby, a fetus, in which the congenital tumor was present. It is the first instance reported, and it establishes the fact that the tumor is congenital.

In answer to Dr. Talbot's direct question, "Why do not these babies vomit from birth?"—the average time of vomiting is from two to three weeks in a large series of cases. Some of them do vomit at the end of the first week. Some spit up a little just after birth. One reason that has been attributed for their beginning to vomit at the end of a week is that the mother's milk begins to be secreted copiously at this time. The ingestion of this larger quantity results in spitting up and vomiting. I believe that the tumor exists at birth and that the lumen of the pylorus is obstructed to a variable extent, the obstruction differing in each case. In some cases it is nearly complete, in others it is much less. Therefore, remembering that each individual needs a certain lumen to his pylorus to get food through wthout vomiting, it is fair to conclude that if the pylorus is sufficiently patent, there will be no vomiting; if it is not sufficiently patent, then vomiting begins.

Instead of supposing that a pyloric spasm exists in these tumor cases, it seems to me that it is more reasonable to suppose that the edema of the mucous membrane and the swelling of the pyloric ring are competent to occasion a rather sudden narrowing, and the onset, therefore, of vomiting. It is true that all parts of the child grow rapidly during these first few weeks, and this tumor will grow, thus obstructing more and more. The answer to the question why vomiting occurs at different periods is that there is a mechanical and not a physiological cause at work. I think it unnecessary to introduce the physiological functional element seen in the contracting pyloric sphincter. The purely physical explanation is entirely adequate. The edema of the mucous membrane, the increased swelling of the longitudinal fold that normally exists within the pylorus, and the natural growth of the tumor itself, all adequately contribute to the obstruction.

Dr. K. G. Percy, Dr. Dunn's paper: I would like to ask Dr. Dunn if in this series he has seen two types:—one of straight fat indigestion, and the other of fat indigestion plus a carbohydrate indigestion. Are these latter not primarily carbohydrate indigestion? You say, that in your series, these cases with sugar indigestion as a complication have not shown a gain on any special type of milk formula even lactic acid milk. We have been following the cases of diarrhea at the Children's Hospital with the gas bacillus test and Dr. Sylvester has been following the fat indigestion cases with the same test. Many of these cases, having secondary inability to take care of sugar, were positive for gas bacillus and did well on butter-milk, both in regard to weight gaining and later, acquiring their ability to take care of fat. Have you found this same phenomena, which we believe typical of a special type of, so-called, fat indigestion?

Dr. H. A. Gale: Was maltose tried in the beginning of treatment of these cases and did it prevent blow-ups?

Dr. H. A. Gale, Dr. Dunn's paper: I would like to ask Dr. Dunn a question, and that is whether or not there is any record of the proportion of those cases in which cane sugar seems to do the damage. My impression is that most of the cases of straight fat indigestion have been either on starch mixtures or cane sugar mixtures. I would also like to ask if there was any attempt made to replace the bovine fat by the other fats. That has been done in some places, althouh no definite results have been reported as yet.

Dr. F. B. Talbot, Dr. Dunn's paper: I notice that Dr. Dunn said that in one of his cases he had found tuberculosis. In infancy the tubercle bacillus usually gains entrance through the glands and in a large number of instances through the mesenteric glands. In a series of cases[1] which I studied two or three years ago I showed that when all the mesenteric glands were tubercular and functionally destroyed, that fat would be digested but not absorbed and as a result fat was found in the stools. Such cases, of course, are not cases of fat indigestion *per se,* they are cases of tuberculosis. Furthermore, it is conceivable that a similar condition can be present in hereditary syphilis, although it has not been proven. Such cases are very difficult to feed and their stools are likely to contain fat; they are sometimes classified as cases of fat indigestion, but they get well if put on proper antisyphilitic treatment. In regard to soap stools, I have found it very difficult to tell whether there is more soap or less soap in a stool. It is very easy to say whether there is soap or not, but when a stool becomes a soap stool, my experience has been that practically all the stool is soap and there is no "more" or "less." To my mind the most important factor in these very difficult cases of infant feeding is the balance of the food, that is the relation of the fat to the carbohydrate, and the protein, and of the sugar to the fat, and so on. In a great many cases in which the stools have been loose and have contained free fat, in other words, fatty acids, I have been able to change the stool into a soap stool very easily, merely by changing the balance of the food, that is, a food with a high percentage of protein and a relatively low percentage of fat and sugar. Last year Dr. Hill and I[2] reported the metabolism of a baby in which the sugar in the food was increased about 3% at a time. We measured the fat, the nitrogen, and the carbohydrate metabolism, as well as the sugar. When the food got beyond the limits of tolerance for sugar the baby had symptoms of indigestion which were due to the sugar. The stools contained a great deal of fat, which they did not contain before. That was not a case of fat indigestion, but a case of sugar indigestion. The digestion of sugar and the fat is so intimately connected, that it is almost impossible to say what element was the primary cause of the indigestion, the fat or the sugar, without previous knowledge of the course of the disease, and I wonder how Dr. Dunn was able to tell that these cases were all cases of fat indigestion. A word as to my feeling as to the action of protein. I look upon buttermilk, Eiweissmilch and precipitated casein as foods in which the action comes more from the form of protein than because it is Eisweissmilch, buttermilk or what not. In other words, it is a protein that cannot be coagulated again. My experience has been that boiling the milk gives practically the same results as buttermilk, precipitated casein or albumen milk. I was very much interested in Dr. Dunn's paper, and I hope there will be more papers like it.

---

[1] Tuberculosis of the Mesenteric Glands in Infants and Young Children: Its Effect on Absorption. Am. Jour. Diseases of Children, 1912, iv, 49.

[2] The Influence of Lactose on the Metabolism of an Infant, Am. Jour. Diseases of Children, 1914, viii, 218.

DR. C. L. SCUDDER, Dr. Dunn's paper: How many cases were observed during this period in this study?

DR. C. H. DUNN, in closing: Thirty-five cases comprise the statistical table which I am at work on.

In answer to Dr. Percy, I will say that we did see carbohydrate, or signs of carbohydrate indigestion in the course of some of these cases, but whenever it occurred we could relieve it very easily, but the fat indigestion we could not relieve so easily. Also there is a large series of cases that came into the hospital which were diagnosed as carbohydrate indigestion only. They gave the symptoms of acid irritating stools, gas, green movements and vomiting, but they were very easily relieved and soon discharged. In those cases when we gave moderate amounts of carbohydrates we did not see signs of carbohydrate indigestion after they entered the hospital. The only time we saw it was when we attempted to experiment by increasing the amount of carbohydrates.

DR. GALE's question: A certain number of cases were on maltose preceding a "blow-up," with an increasing amount of fat in their stools; fully as many cases in the series showed fat "blow-ups" on maltose as on lactose. Possibly we had more on maltose. The maltose seemed not so much of use in preventing the "blow-ups," but it allowed us to obtain a gain in weight with a small amount of fat. It nourished the baby better, but did not increase the fat tolerance.

DR. PORTER's question: I am by no means convinced myself from our evidence that the cow's milk salts do not play an important rôle in these cases. In fact, we entered the investigation rather in the hope of obtaining evidence to that effect. The method of using precipitated casein and alternating with whole milk protein is a rather crude one, anyway. What we would like to do if we had enough breast-milk would be to repeat the experiment of using human milk fat with cows' milk, whey and vice versa. It seems to me it would give very definite evidence as to the rôle of the salts. All we were able to conclude was that we did not get the advantage from feeding the precipitated casein and diminishing the salts that we expected to get when we began the investigation. There were certainly cases in the series which did better on precipitated cesein, but there were others which did not.

Dr. Talbot has spoken about estimating the amount of fat as soaps in the stools. I do not believe that our method is an accurate one at all, but we are endeavoring to adopt a standardized method which we will transmit from house officer to house officer. The method is simply to take a definitely measured portion of the stool and mix it with Sudan III and acetic acid, boiling, and then estimating the results by the concentration of the globules. This is a very crude method, and although we have what we call a sliding scale, yet the evidence of the actual amount of fat as shown in this way does not amount to very much—it is either a soap stool or it is not.

The importance of maintaining a balance between the fat, carbohydrates and protein I quite agree with. You have got to keep the balance more or less constant or some form of indigestion will surely follow. Dr. Talbot asked whether they were all cases of fat indigestion or whether some of them might not have been carbohydrate indigestion. I might say that we did not classify them as to what was the possible primary condition. We classified as carbohydrate indigestion those which did not show fat indigestion, cases showing symptoms of carbohydrate indigestion which were relieved when the carbohydrates were cut down or changed. The other cases which showed fat in the stools we classified as fat indigestion without reserve. The only evidence which I have on that point was obtained from looking over all the histories, which we went into as carefully as possible. This frequently suggested carbohydrate overfeeding, and it was on that basis that I suggested that the carbohydrate fermentation seemed to be a very possible primary cause, and I think that the relationship between fat and carbohydrate indigestion is very close, just as Dr. Talbot has stated.

Book Reviews.

Therapeutics of Dry Hot Air. By CLARENCE EDWARD SKINNER, M.D., LL.D. Third edition. Thoroughly revised to date. Hammond, Indiana: Frank S. Betz Company. 1914.

The first edition of this book was reviewed in the issue of the JOURNAL for Jan. 29, 1903 (Vol. cxlviii, p. 128). The second edition, published in 1905, contained a number of additional case reports, several new illustrations, and a number of technical details. This third edition has been largely rewritten so as to embody and conform with recent advances in knowledge, and contains a new chapter on the incandescent electric light as a local therapeutic agent. It is illustrated with 40 text-cuts. It has the merits and defects of its original, and, in the words of our previous review, "cannot be called a judicial statement of the uses and limitations of this mode of treatment."

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by SIR WILLIAM OSLER, Bart., M.D., F.R.S., and THOMAS MCCRAE, M.D. Volume III. Diseases of the Digestive System—Diseases of the Urinary System. Philadelphia and New York: Lea and Febiger. 1914.

The third volume of this standard work now appears in its second edition. This volume takes up diseases of the digestive system and of the urinary system. The plan of the first edition has been followed. There are authoritative chapters on the various aspects of the diseases of the two systems covered in this volume. These chapters are written by men who have done notable work in the fields that they discuss. It is sufficient to say that this volume, like its predecessors, leaves very little to be desired in the complete and up-to-date discussion of the subjects to which it is devoted.

Diseases of the Rectum and Anus. A Practical Handbook. By P. LOCKHART-MUMMERY, F.R.C.S., Eng., Senior Surgeon to St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum; and Surgeon to the Queen's Hospital for Children; Late Hon. Surgeon, King Edward VII Hospital for Officers. New York: William Wood and Company. 1914.

This small volume of 350 pages is written by an Englishman and published in New York. Mummery says: "The material for the book has been gathered from my own experience in private practice and at St. Mark's Hospital. This hospital affords unrivalled opportunities for studying diseases of the rectum, for only diseases of the bowel are treated there, and the attendances in the out-patient department are over 7500 in the course of a year, while cases admitted to the wards average about 650. It is much to be regretted that while numbers of doctors from America, the Colonies, and abroad generally, attend the practice of this hospital, the number of English doctors who avail themselves of the clinical material to be found there is deplorably small." The author goes on to state that nearly 50% of the population, presumably of England, have some rectal trouble sometime in their life. He tells us that the book is a practical guide to the treatment of rectal diseases, and that most of the drawings are his own.

The book is much smaller and more compact than either of the volumes on the same subject recently reviewed in this JOURNAL. It has that curious omission of a chapter on Anatomy, which certainly detracts from the value of the book. The treatment of the various conditions described, (and everything which probably comes within the domain of proctology, is described), is brief, definite, and positive. Simple procedures are invariably given preference. The author emphasizes repeatedly the importance of post-operative treatment, and since he is in charge of a special hospital, to which only rectal cases are admitted, he has excellent opportunity of judging both the satisfactory effects of efficient post-operative treatment and the unfortunate results which follow too frequently the average treatment in the hands of the average practitioner.

We notice with surprise that he does not recommend dilatation of the sphincter before operation for internal hemorrhoids. The author's own operation of perineal excision of the rectum is described in much detail, although he frankly says, "It is now, to a large extent, replaced by abdominal-perineal excision." He has had some excellent results by this method; several cases which have already passed the five-year limit. He comments on the similarity between his operation and that of Quénu, and of Hartmann, of Paris; but his own operation was worked out without knowledge of either of the others. In colostomy, he recommends the opening through fibers of the rectus muscle.

There is no bibliography, and comparatively few references to other authors, none to American authors, with the exception of Tuttle. On the whole, however, the book is an excellent small text-book. Its printing, paper, and illustrations are very satisfactory.

The Backward Baby. A Treatise on Idiocy and the Allied Mental Deficiencies in Infancy and Early Childhood. By HERMAN B. SHEFFIELD, M.D., New York. Awarded the Alvarenga Prize of the College of Physicians of Philadelphia, July 14, 1914. pp. 184, with 22 original illustrations in the text. New York: Rebman Company. 1914.

The author states in his preface that "the aim of this prize essay is to present to the profession a practical survey of the etiology, pathology, diagnosis and treatment of the diverse mental deficiencies as they occur in children under five years of age. The existing excellent monographs and text-books on the subject are," as he truly states, "almost exclusively devoted to the study of feeble-mindedness in children of school age and adults." There was, therefore, an opportunity to write an epoch-making book. Unfortunately, the author has not taken advantage of this opportunity, but has instead written a superficial and incomplete treatise on the subject. It is interesting and instructive, but falls far short of what it might have been. We hope that he will take advantage of the opportunity and, using this book as a basis, write a new one.

A Mind Remedy. By JOHN G. RYERSON, M.D. Boonton, N. J. 1914.

The writer's idea as stated by himself is that he proposes to show that scores of the most common diseases have such a uniformity of symptoms as to be justly classed as one disease, and that he has found what is practically a specific for this disease, which is lactose. The large number of cases, which include asthma, eczema, locomotor ataxia, organic heart disease, interstitial nephritis, difficult labor, puerperal convulsions, and many others, are so imperfectly reported that no conclusions can be drawn; and the looseness of thought which allows the writer to include among his cases some where he claims the figure, or voice, was improved, the apparent age lessened, the hands and feet made smaller by his treatment, does not inspire confidence. This book may be neglected except as a curiosity of medical literature.

A Treatise on Diseases of the Rectum and Anus. Edited by A. B. Cooke, A.M., M.D., Formerly Lecturer on Diseases of the Rectum and Professor of Anatomy in the Medical Department, Nashville, etc. Assisted by William M. Beach, A.M., M.D., Pittsburgh, Penn.; George B. Evans, A.M., M.D., Dayton, Ohio; J. Coles Brick, M.D., Philadelphia, Penn.; Alois B. Graham, A.M., M.D., Indianapolis, Ind.; Granville S. Hanes, M.D., Louisville, Ky.; Louis J. Krouse, M.D., Cincinnati, Ohio; Collier F. Martin, M.D., Philadelphia, Penn.; Frank C. Yeomans, A.B., M.D., New York City; A. J. Zobel, M.D., San Francisco, Cal. With 215 illustrations in the text and 21 full-page plates, 7 in colors. Philadelphia: F. A. Davis Company. London: Stanley Phillips. 1914.

This admirable and rather small volume of six hundred pages treats its subject in an unusual manner. In his foreword, the author says that at least 20 years ago he decided to write a practical treatise on Diseases of the Rectum, based on his own personal experience. "But as circumstances directed my interest and practice into the broader field of general surgery, enthusiasm waned and the work was laid aside when only partially completed." Recently he has revised the previously written chapters and has edited the remainder. The book is, therefore, Dr. Cooke's own text-book in its first half and a series of monographs from the pens of nine specialists in the latter half. Moreover, the rectal surgeon of twenty years ago has now become a general surgeon, and as a result we find a wide general experience concentrated upon a specialty. This is a very desirable and unusual occurrence. The book commences with a very satisfactory chapter on anatomy and physiology. Dr. Cooke's own contributions include most of the commoner conditions of the anus and rectum. The other 14 monographs treat of stricture, benign and malignant tumors, neuroses, trauma, local anesthesia, major operations, and interesting chapters on recto-colonic alimentation and relation of rectal diseases to the general health. An excellent feature of much of the work is a brief outline at the beginning of each chapter and history of the subject which is about to be considered. The illustrations are numerous and unusually good; in spite of this it has been found possible to eliminate the extreme gloss of the paper so often used for the purpose of illustrations, for which the editor deserves our thanks. The binding, printing, index, etc., are entirely satisfactory. The book is to be cordially recommended; it is really a very admirable hand-book,—long enough, but without a single unnecessary page.

The Tonsils,—Faucial, Lingual, and Pharyngeal. With Some Account of the Posterior and Lateral Pharyngeal Nodules. By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School; Surgeon in the department for diseases of the nose and throat; Boston Dispensary; Assistant Laryngologist, Massachusetts General Hospital; Member of the New England Laryngological and Otological Society; Members of the American Laryngological, Rhinological and Otological Society. Illustrated. St. Louis: C. V. Mosby Company. 1914.

This is a book of 160 pages on the tonsils and the other parts of the tonsillar ring, including their development, anatomy, physiology, pathology and surgery. The author states in the preface that his object is "to put into concise form the facts concerning the lymphoid tissues of the throat," and he has succeeded admirably in doing so. He has combined into a consecutive and attractive manual the results of his work in the pathological laboratory, his experience in a large clinical service and the review of several of the more important publications. The book presents the subject better and more thoroughly than do the corresponding chapters in any of our text-books. It is not encumbered with varying points of view, although the student who wishes to go deeper will find numerous references to other authors. Much has been written in recent years about the tonsils, but this is so scattered that it is not easily available. In collecting this material the author has been guided by his own judgment, which represents the opinion and practice of American authorities of the present day. The illustrations are original and to the point. A better understanding of the tonsillar ring is desirable not only for the laryngologist, but also for the general practitioner and pediatrist, and to all of these this book should be welcome.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, FEBRUARY 4, 1915.

Editors.

Robert M. Green, M.D., ***Editor-in-Chief.***
Walter L. Burrage, M.D.
Frederick T. Lord, M.D. } ***For the Massachusetts Medical Society.***

Committee of Consulting Editors.

Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.

Edward C. Streeter, M.D., Boston, *Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, ***Secretary.***

Ernest Gregory, ***Manager.*** **W. M. Leonard,** ***Consulting Manager.***

Subscription Terms: $5.00 ***per year, in advance, postage paid, for the United States.*** **$6.56** ***per year for all foreign countries belonging to the Postal Union.***

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, ***Manager,***
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

FEDERAL OR LOCAL ADMINISTRATION OF MARITIME QUARANTINE.

In several recent issues of the Journal we have commented editorially on the question of the transfer of the Boston Quarantine Station from municipal to federal control. On January 1, a hearing on this subject was held before the City Council, and at the request of that body a committee of six was appointed by the Boston Chamber of Commerce to study the problem and report at a future meeting.

The special committee on the quarantine service is composed of former Lieutenant-Governor Robert Luce, chairman; Magnus W. Alexander of the General Electric Company, who served last year on the State Commission on Pensions; George W. Franklin of the Walker-Gordon laboratory; Irving B. Howe of A. H. Howe and Sons, shoe dealers; Demarest Lloyd of the *Boston Journal;* and Hugh D. McLellan, lawyer.

On Thursday of last week, January 28, this committee held a public hearing which all interested persons were invited to attend for expression of their views or to submit supplementary information. The committee had before it the stenographic records of the hearing of the City Council on January 1 and other data hitherto presented. Although the subject of maritime quarantine has previously been considered in the Journal, the question is of such importance that its further discussion at the present time seems desirable.

Maritime quarantine is about as old a subject as history. In general but little thought is given to it outside of those directly concerned, except when some epidemic occurs, or as recently, when the City of Boston discussed the advisability of turning the local quarantine station over to the Public Health Service. The expense of maintaining a model quarantine station is considerable and largely has to be borne by the taxpayers of either city, state or nation.

This country is a union of states, and for the common welfare a central form of representative government exists, with certain fixed powers. Each unit or state also has recognized rights. One of the rights of the national government is to regulate or restrict commerce with foreign countries, and in that the state must subordinate itself to the nation.

In 1893 Congress passed certain quarantine laws and designated the manner in which they should be carried out. It was declared unlawful for any vessel from a foreign port to enter any port in the United States except in accordance with the provisions of this act and with such rules and regulations of state and municipal health authorities consistent with this act. A penalty is provided for violation of same.

It is generally accepted that among intelligent people, the least governed the better. International or interstate quarantine is a matter bound to interest the country as a whole, for any port of entry may distribute people to every state in the union or to adjacent countries with whom we have treaty obligations, including certain sanitary protection.

Hence we find that the United States passes a national law and at the same time makes provision for any state or municipality to work its solution in its own way as long as the letter of the law is carried out. Further, there is nothing to interfere with the state adding such rules as it sees fit for local safety. For example, every quarantine station would be required to detain a case of bubonic plague and clean up the ship, but would not be required to do the same with a case of measles or scarlet fever. The latter type of cases would be provided for under local rules.

Under the same Act of Congress an organized branch of the federal service was authorized to carry out these acts, namely, the Marine Hospital Service, now the Public Health Service, and it was provided for the Surgeon-General of that service under direction of the Secretary of the Treasury, to coöperate and aid state and municipal health boards in the enforcement of rules and regulations laid down by the Secretary.

In looking over the regulations issued in 1910 may be found sections explaining the above in detail. Pages 1 to 14 relating to regulation of foreign commerce by the government, show how local health boards must be familiar with federal law and enforce the same; how, in case of failure on the part of local health authorities to enforce the law, the United States can insist on a federal officer signing health certificates before a ship can enter a custom house, which means permit to discharge passengers, crew, and cargo.

These regulations are being constantly changed to facilitate commerce as new discoveries are being proven as to the transmission of disease. Also the government is being constantly informed through medical officers stationed at our consulates in foreign countries or by the consuls themselves of the sanitary conditions and existence of epidemic disease throughout the world. This information is distributed by the Public Health Service to all concerned.

The press inference is that it would be detrimental to local business to change from local to federal control for the following reasons: The port would be closed from sunset to sunrise. Ships from Canadian ports would be subject to delays that they now escape by being allowed to pass without stopping, regardless of time. Government officials with attendant red tape and, someone added, gold lace, would tend to delay clearance. In case of doubt decisions could be more quickly given than to have to wait an opinion from Washington.

On the other hand, it must be remembered that local officers have to conform to federal law and said law must have provided for these privileges or local officials might be accused of violations. As a matter of fact, the local men have always been efficient in this matter and the regulations provide under certain circumstances for ships to be passed after dark and for permits for ships from adjacent territory, hence there can be no suspicion of special privilege. The fact that a large proportion of arriving passengers are destined to points outside the state brings up the question whether or not the local community or the nation should bear the expense.

The commercial world is moving steadily forward and today sailing ships are almost a thing of the past, steamers having taken their place. This is important as changes in structure and speed of ships affect quarantine problems. Sailing vessels were usually long enough at sea to cover the incubation period of disease and were easy to disinfect, their greatest danger being the carrier of disease in apparent good health. Steamships cover the route more quickly, are more difficult to disinfect thoroughly owing to their more complicated structure and may easily arrive with passengers or crew in the incubation stage. The danger of port infection always has to be considered as it depends on a knowledge of sanitary waterfront conditions of the port cleared as well as entered. For example, a plague infected rat escaping a ship in Boston might be a far more serious matter than the same event happening in some of the European ports.

Shipping firms are naturally interested in seeing that they have as little red tape as possible in clearing or entering their ships. Chambers of commerce are anxious that their cities may offer every facility for the landing of passengers and cargo in order that local commerce shall increase. They may feel that it is easier to do business with officials they know and who in turn are familiar with local conditions and problems. They want prompt decisions and officials interested in local welfare.

There is no known reason why the federal government cannot meet the local authorities and arrange to keep a certain number of local men in permanent employ to see that local interests are best served in compliance with federal regulations. The objection to the chief being in Washington should not be a stumbling block, for there is nothing in the law or regulations that prohibits officers in charge of quarantine stations having or using such authority as would cover all ordinary problems or emergencies. The objection made to gold lace seems largely due to military semblance and the natural opposition to military government incompatible with a republic. The Public Health Service is not a military service but a civil organization in which part of the officers are commissioned by the President and part appointed by the Secretary of the Treasury under the rules and regulations of the United States Civil Service Commission. It may better be considered a sanitary police organization, a civil organization charged with the administration of laws relating to public health but without military rank or power. It is the nearest thing we have to a National Board of Health. There is no reason why it should not be conducted on broad business lines and appoint such officers as are best qualified for local needs. One of the best things that could happen would be for Congress to recognize it as a beginning of a National Department of Health and place or reorganize it on a liberal civil service basis. If this service is feared for any good reason by the commercial interests it is time it was reorganized on such a basis that it would be welcomed.

In an organized service with the functions of the Public Health Service a distinctive uniform is necessary for certain work, to distinguish grades, for discipline, and identification. For this purpose a simple uniform ought not to be difficult to devise. The uniform of the New York State Quarantine Service which is of a decided distinctive type has never yet been the cause of delay or complaint of delay in the work.

To sum up, there is nothing under the law which local officials can grant but what the federal officials can grant. It is a question whether the community prefers to pay the cost of maintaining a station for emergency, whether it would be better for the commercial and shipping interests to have local officials or federal officials administer the federal law, and whether the large interests of public health are not to be regarded above all local and personal considerations.

At a meeting of the City Council on Jan. 30 the proposed ordinance, effecting the quarantine transfer, was rejected without prejudice, in order that the matter may be brought up as new business before the new Council next week.

◆

A CAREER OF PROFESSIONAL AND PUBLIC SERVICE.

ON the first of February, Dr. John Hildreth McCollom retired after a service to the City of Boston in various medical capacities for forty-two years, the past twenty years of which were spent at the Boston City Hospital. During these years he has made a notable record of professional and public service, and his retirement from more active participation in the administration of the hospital is an important loss to that institution.

After serving throughout the Civil War as hospital steward in the Thirtieth Regiment of Massachusetts Volunteer Infantry, Dr. McCollom first established his connection with the Boston City Hospital as house officer in 1868. In 1872 he became assistant to the city physician of Boston and served in that capacity until 1881 when he became himself city physician. In this capacity he served the public faithfully and efficiently until 1895, when he was appointed resident physician of the newly opened South Department. Here he served until 1909, acting since 1900 as physician for infectious diseases. It was during this period that he made his most valuable contributions to medical science.

Dr. McCollom's contributions to medical literature began early in his career. His first articles on "The Use of the Obstetric Forceps" and "The Smallpox Epidemic in Boston," were published in this JOURNAL in 1882 (Vol. 107, page 266 and 344 respectively). Following these the bibliography of his publications forms an important list of over thirty-five titles, covering a wide range of medical and surgical subjects. Most noteworthy of all these are his contributions on diphtheria, representing the results of his epoch-making work at the South Department. At the time when Dr. McCollom took charge of this department the mortality rate from diphtheria was 18 per 10,000 of population and nearly 50% of those infected. This was just before the introduction of intubation and antitoxin. It was the great achievement of Dr. McCollom by introducing these measures, not without opposition, and by the persistent efficiency of his own watchful professional care, to reduce the incidence and mortality of diphtheria almost immediately to their present low rate. Our feeling of security against this frightful scourge of humanity is now so familiar and easily assumed that we are prone to forget how great a service this was to mankind and to the progress of medical science. Dr. McCollom has won international recognition for this and for his similar work in the supression of scarlatina, as evidence of which he was chosen in 1908, from among the entire medical profession, to write the chapters on diphtheria and scarlet fever in Osler's "Modern Medicine." As city physician and as superintendent of the South Department, Dr. McCollom put into effect in practice the modern methods in control of contagious infections, so that since the opening of the South Department in 1895 there has been no general epidemic of scarlet fever in Boston comparable with those in previous years. The statistics of these diseases are modestly but eloquently presented in a series of graphic charts published by Dr. McCollom in 1914.

Upon the retirement of Dr. Rowe in 1909, Dr. McCollom became superintendent of the Boston City Hospital and for the past six years has displayed in that office the same zealous efficiency of public service that he showed as city physician and at the South Department. This period has been marked by important progress in the development of the hospital in which Dr. McCollom has had a prominent and guiding part. No detail of administration was so minute as to escape his watchful oversight. His standard of fidelity in the littlest things of public service was of the highest. To the discerning eye evidence of this is patent in every aspect of his work,—in the painstaking care, for instance, of his annual reports and hospital statistics. In his last report (the fiftieth of the hospital) is a diagrammatic table illustrating the percentage distribution of funds in the administration of the hospital, a diagram requiring much pains and labor for its preparation, and presenting results of important value to professional hospital administrators. Dr. McCollom was not only a public hygienist in advance of his time but established a standard of honorable fidelity in the administration of public funds which might worthily serve as an exemplar to others in public service.

Dr. McCollom has been fortunate in that his work has been genuinely appreciated by those of his own time and generation. In accepting his resignation as superintendent, the trustees wrote in part as follows:—

"The trustees are exceedingly sorry that your health has compelled you to take this step. They are reluctant to part with an associate with whom they have enjoyed such long and pleasant relations, and one whose unflagging zeal and earnest and untiring efforts for its welfare have contributed very much to the upbuilding and high standing of the hospital. But above all else stands the record of the great work you have done for the South Department, which will be a monument to you more enduring than bronze or stone. Your unfaltering faith and courage in the use of antitoxin, which has so marvellously decreased the death rate from diphtheria, has saved to the world many thousands of useful lives and a grateful public will ever hold your name in high appreciation and gratitude for your noble services and research. After forty-two years of faithful service for the city of Boston, you have the consciousness of having achieved and merited a position that places you in the front ranks of the benefactors of mankind. In your retirement you carry with you the well wishes and high commendation of the trustees and the public. The trustees extend to you their sincere sympathy and the hope that a well-earned rest may restore such measure of health as to enable you to pass many years in comfort and enjoyment."

Dr. McCollom's contributions to medical science have also been abundantly recognized by his colleagues, and as emeritus professor of contagious diseases in the Harvard Medical School, he holds a position at the head of his special department of medicine.

It is a matter of the greatest good fortune for the community and the profession that Dr. McCollom's withdrawal from the hospital will leave him free to continue in private the study and practice of his specialty. The most cordial esteem and regard of the profession follow him with wishes for continued health and activity.

His has been a long and honorable career of professional and public service whose ripest and most honored years are yet to come.

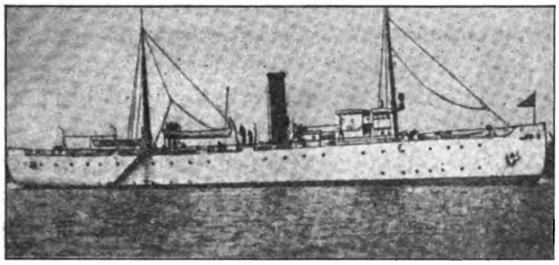
◆

A HOSPITAL SHIP FOR DEEP SEA FISHERIES.

In the issue of the Journal for November 23, 1911, we published an editorial on "The Romance of Medical Relief at Sea," describing the plan, initiated by Drs. L. L. Williams and T. W. Salmon to provide a hospital cruiser to patrol the deep sea fisheries of our shore and carry first aid to the sailors who are endangering their lives in the common service. In 1912 a bill aiming to embody this project in legislation was introduced before the National Congress by Representative Gardner, asking an appropriation of $50,000 for the purchase of such a craft and for a suitable annual appropriation for its maintenance. This bill was discussed in

Congress for over a year, was approved and advocated by numerous local and national bodies and was warmly championed by individuals, among them Dr. Horatio R. Storer and other physicians. Notwithstanding this, probably for political reasons, the bill, after being approved in committee and reported to Congress, was finally defeated in 1913. The project, however, was not at an end.

In the summer of 1914, Mr. Gardner obtained an amendment to the pending revenue cutter bill permitting the Secretary of the Treasury to fit out a United States revenue cutter to serve as a hospital ship in the deep sea fisheries off the New England and Newfoundland coasts. The *Androscoggin* was selected and equipped for this purpose and on December 22 was assigned to the Boston and Gloucester fishing fleet from January 1 to February 20. Capt. W. E. W. Hall is in command of the vessel and Dr. O. H. Cox of the United States Public Health Service has been detailed to take charge of the medical department. The equipment of the ship for medical and surgical purposes has been thorough.



THE ANDROSCOGGIN.

"Three large rooms have been set aside for the hospital quarters. One is a sick bay with six sanitary cots, another is the isolation ward, with two cots, where contagious cases found among the fishermen will be cared for, and the third or centre room, consists of an up-to-date operating room, patterned after the hospitals on battleships. There is an operating table, water sterilizing tanks and basins, surgical instruments and in fact all the paraphernalia found in a hospital."

The route of the *Androscoggin* on its cruise comprises the fishing territory off the entire coast of northern New England and the Provinces, including Brown's bank off Nova Scotia and the Banquereau and Sable Island banks to the eastward. The vessel sailed from Boston early in January and on January 7 left Gloucester for her initial cruise. In the early days of her service she seems amply to have justified the expectations of those who have consistently urged the necessity of such a service. Within a week the vessel was able to transfer from a fishing schooner to hospital at Halifax a patient with appendicitis in urgent need of operation, and numerous minor cases were treated aboard the *Androscoggin* or by boarding parties on their own ships. Later, when the Belgian relief ship *Camino* was disabled, the *Androscoggin* aided the British steamer *Kanawha* in convoying her safely to port. It is a matter of great satisfaction to physicians and to all interested in problems of medical relief, that it has at last been possible to establish a service so urgently needed. The success of this first six-weeks' cruise of the *Androscoggin* should lead to the extension of the plan for such service in the future, a service in which the United States has hitherto been discreditably inferior to Great Britain, France and other civilized nations.

◆

THE NURSING QUESTION.

A BILL is now before the Massachusetts Legislature to amend the requirements for nursing to the following effect:

"Applicants must show the usual qualifications as to age, character, etc., and must have received a certificate of graduation from a training school for nurses, considered efficient by the board, etc., etc. Applicants for limited registration under this act, who shall furnish proofs as to age, character, etc.,....but who cannot qualify as graduates of approved training schools for nurses....shall be examined by said board, and if found competent to care for cases which do not require expert services, shall be registered with right to use the title of household nurse, and shall receive a certificate in testimony thereof, etc. Nurses registered with the title household nurse, shall not care for the major surgical cases, nor make internal obstetric examinations......."

"After January first, in the year nineteen hundred and sixteen no person shall engage in the work of nursing for hire in this commonwealth unless he or she has become registered in accordance with the provisions of this act."

"The board shall have authority under this section to investigate at any time the training schools for nurses in this commonwealth for the purpose of determining their fitness and efficiency as shown by their general equipment, by the character, the methods and the extent of instruction given. For the purpose of conducting this investigation the board may employ a person legally entitled to the title of registered nurse."

It would appear from a paper entitled, "Some Problems in Relation to Nurses' Training Schools," read by Dr. Charles Stover before the New York State Medical Society, that only ten per cent. of the nursing outside of hospitals in the state of New York is done by graduate nurses. There are no figures to show that this proportion is different in Massachusetts. In other words, nine-tenths of the people,—probably those who cannot afford to pay the minimum price of twenty-one dollars a week are a considerable proportion—must get along without trained nursing when they are sick. Although provision is made in the bill for "household nurses," legislation is asked to prohibit nursing for hire unless registration has been obtained.

At the meeting of the New York society at which Dr. Stover read his paper a committee was appointed consisting of Dr. Stover, an ex-president of the society, Egbert LeFevre, dean of the University and Bellevue Medical College, Alexander Lambert, professor in Cornell Medical College, and Roswell Park, the eminent surgeon. The report of this able committee should cause our legislators to consider seriously whether we in Massachusetts may not adopt the same conclusions. The report was in part:

> "It is a fair conclusion that the standard for entrance in New York is too high for practical results.... It is more important that the people have small hospitals than that a few highly trained nurses obtain the thus-far little coveted title of R. N..... Meanwhile your committee is of the opinion that the State should recognize the nurse problem as an experimental one, to be regulated at present by wise administration rather than by legislation."

After all is said, the health of the public under the present laws is in the hands of the physicians who have been registered by the Commonwealth and the responsibility is theirs and not that of their assistants, the nurses. If the physician finds his assistant unsatisfactory he can procure another, adapted in training, personality and pay to his patient's requirements. Perhaps in the future the nursing profession may provide trained services for all of the people for good pay, for small pay, or for no pay at all, just as now the medical profession furnishes skilled care to all the sick. When this time arrives, if it does, it may seem best for the State to limit nursing to those who are registered. Conditions at present do not justify such a course. That the Board of Registration of Nurses should have supervision over the training school for nurses is a debatable point and does not correspond with the practice in the case of the Board of Registration in Medicine and the medical schools.

◆

CONGENITAL PYLORIC TUMOR.

In an article printed elsewhere in this issue of the Journal, Dr. Charles L. Scudder presents and emphasizes an important differential classification of cases of congenital infantile pyloric stenosis. The obstruction in these cases may be either functional or organic, it may be due either to muscular spasm or to the presence of an actual tumor impinging upon the lumen of the pylorus. That true and uncomplicated pylorospasm may exist there can be no reasonable question. In babies presenting this condition, the symptoms are not pernicious, they are variable, and are characterized chiefly by intolerance of the stomach for the total amount of food which it ought normally to contain at the given age, though on lesser amounts of somewhat stronger food the nutrition can be fairly well maintained. On the other hand, babies in whom the obstruction is due to pyloric tumor are intolerant of all food, and present a fairly invariable train of fatally progressive symptoms. The most important point, therefore, in the diagnosis of cases of congenital infantile pyloric stenosis is the early and accurate differentiation of these two classes of cases. This may most effectively and reliably be accomplished by means of the bismuth meal x-ray.

It has been maintained by many that in cases of obstruction due to pyloric tumor there is present also an element of pylorospasm. This statement seems to be fairly disproved by the series of cases reported by Dr. Scudder from his personal observation, and collected by him from the literature and from the personal communications of other surgeons, in which bismuth meal x-ray or autopsy has shown the persistence of absolute pyloric obstruction by tumor following symptomatic relief of the condition by posterior gastro-enterostomy. Dr. Scudder speaks with authority on this subject by virtue of his extensive and successful experience in the treatment of such cases. For the general practitioner, the most valuable lesson to be derived from this consideration is the crucial importance of the prompt and accurate differential diagnosis of all cases of congenital pyloric obstruction before it is too late for surgical intervention to afford prospect of life-saving relief.

◆

MEDICAL NOTES.

Eugenic Bill in Indiana.—Report from Indianapolis states that on January 21 the Indiana senate passed a bill requiring that all persons before obtaining a marriage license must present a satisfactory certificate of health from a physician. The bill awaits action by the house of representatives.

Pathologic Pictures in Natural Colors.—On Friday and Saturday of last week, January 29 and 30, at an exhibit of x-ray materials in Atlantic City, N. J., there was shown a valuable collection of pictures of pathologic specimens in natural colors, made by means of the new kodachrome plates. This is the first public exhibit of work of this character and the possibilities suggested by this method of reproducing pathologic material are of distinct interest to physicians.

British New Year's Honors.—Among the recipients of British New Year's honors recently announced are, as usual, several physicians. Sir William MacGregor, G. C. M. G., C. B., is appointed to the Privy Council, Surgeon Major General Eugene Fiset of Canada, is created C. M. G., and the order of knighthood is bestowed on Perceval Aleyn Nairne, Chairman of the Committee of the London School of Tropical Medicine.

New York Death Rate Declines.—The mortality during the past week was noteworthy because of the extremely low point which it reached as compared with that of the corresponding week in 1914,—13.10 last week as against 14.6 in 1914. Inasmuch as the mortality of the previous weeks of last year was relatively high, this drop for the city is very welcome. Taking into consideration the increase of the population, the weekly rate during the week just ended shows a decrease equivalent to 171 deaths. The deaths from influenza numbered approximately the same as during the same week in 1914; on the other hand the deaths from organic heart diseases, diseases of the digestive system, pulmonary tuberculosis, Bright's disease and nephritis, and diseases of the nervous system were considerably fewer.

The number of deaths from pneumonia, while much higher than in the corresponding week in 1914 was considerably below that of the week ending January 16th, 1915. The mortality from the infectious diseases, especially measles and diphtheria was very much below the average.

Viewed from the point of age, the decreased mortality was apparent in all the age groupings of the population.

The death rate for the first four weeks of this year was 14.32 per 1000 as against 14.62 per 1000 for the corresponding period in 1914, a decrease of .31 of a point.

European War Notes.—Report from Budapest states that on January 2 Dr. William Crookston, the new director, and Dr. Henry Day, the new assistant director, of the American Red Cross Hospital at Budapest, arrived in that city from New York by way of Genoa. Dr. Charles MacDonald of Salem, N. J., the former director, and Dr. Cary A. Snoddy of Knoxville, Tenn., the new director of the American Red Cross Hospital at Vienna, also arrived at Budapest on the same day.

It is announced that Mr. William Lindsey of Boston, has promised to give, if necessary, $10,000 to pay the expenses of the Harvard Medical School unit which it is planned to send to the American Ambulance Hospital at Paris on April 1. This unit will have charge of wards aggregating one hundred and fifty beds.

An official report of the American Red Cross Society published on January 22, records the activities of that organization from August 1, 1914, to January 1, 1915. During this period a total fund of $1,188,112. was collected by the Red Cross. Up to January 9, $760,510. of this fund has been expended in the maintenance of forty-five surgeons and one hundred and fifty nurses on war duty in Europe.

"By March the six months' duty, which each member of the various units agreed to give the Red Cross, will have expired, and those who desire to return to this country will be allowed to do so, other surgeons and nurses being sent to Europe to take their places.

"The report shows that up to January 9 the Red Cross had shipped to Europe 772,900 pounds of medical cotton, 802,400 yards of gauze, 709,000 assorted bandages, 3168 rolls of adhesive plaster, 13,965 pounds of chloroform and ether, 77 cases of drugs and medicines, 35 cases of instruments, 20 United States army field medical outfits, 15,000 doses typhoid prophylactic, 10,000 tubes smallpox vaccine, 50,000 doses tetanus antitoxin, 9,500 blankets, 2,211 shawls, 516 coats, 1,740 sweaters for women and children, 10 barrels of alcohol, and 2,638 cases of miscellaneous supplies."

The French Red Cross, consisting in reality of three affiliated societies, has been taking an active part, in conjunction with the French War Office, in the care of wounded soldiers in the north of France. "At the beginning of the war this society established 93 dressing stations, 83 dispensaries and 35 canteens at railway stations. The principal work since undertaken by the society has been the preparation of auxiliary hospitals; it has organized altogether 771, which contain now 56,579 beds. To bring the wounded to these hospitals, however, it possesses only 32 automobiles, which are stationed for the most part at Paris, Amiens, Creil, and Rheims."

On Jan. 30 the total of the New England Belgian relief fund amounted to $186,276.41; the Massachusetts Red Cross fund to $106,997.28; the New England Jewish relief fund to $29,727.92; and New England British relief fund to $17,506.82; the New England Polish relief fund to $14,961.67; and the Russian relief fund to $10,674.00.

In New York the following committee has been appointed to organize and raise a Serbian relief fund: Willard Straight of J. P. Morgan and Company, Mrs. Edward Hewitt, Prof. M. I. Pupin of Columbia University, Dr. Albert Shaw, Mrs. Lawrence Elliman, Mme. Grouitch, Mrs. Ethelbert Nevins, Mrs. John L. Griffith and Miss F. Hastings, secretary.

BOSTON AND NEW ENGLAND.

Hospital Concerts for February.—The concerts of the Boston Hospital Music Fund for February have been announced as follows:—

Feb. 7	Perkins Institution for the Blind, Watertown.
Feb. 14 and 21	Boston City Hospital.
Feb. 23	Cullis Consumptives' Home.
Feb. 28	Cambridge Homes for the Aged.

Massachusetts Homeopathic Hospital.—The annual meeting of the corporation of the Massachusetts Homeopathic Hospital was held in Boston on January 26. The present officers were reëlected. Owing to the unusually large number of free patients last year, a deficit of $20,000 was announced in the financial report. Edward H. Mason, the president, reported that during 1914, 6,489 patients were treated in the main hospital, and in all departments 23,260, an increase of 808 over 1913.

At the Haynes Memorial department for contagious diseases, 757 patients were treated, 300 more than in any other year since the opening of the department in 1908.

Brookline Free Hospital for Women.—The recently published thirty-ninth annual report of the Brookline (Mass.) Free Hospital for Women records the work and progress of that institution for the year ended October 1, 1914. During this period the total number of patients operated on was 705, an increase of 23 over the previous year. In the out-patient department there were 6,190 consultations and 1,350 new patients of whom 742 were referred to the main hospital. A class of twelve nurses was graduated from the Training School. The report is illustrated with several full page plates representing Potter ward, the hospital building and a portrait of the late Dr. William H. Baker, founder of the Hospital, of whom an admirable obituary is presented in the report by Dr. William P. Graves.

Portland Board of Health.—The recently published twenty-seventh annual report of the Portland (Me.) Board of Health records the activities of that body for the year ended April 1, 1914. During this period the city suffered from a small epidemic of forty-seven cases of smallpox which was efficiently controlled and terminated with no deaths. The total number of deaths during the year was 1,059, of which 121 were from pneumonia, 109 from nephritis and 86 from tuberculosis. The total number of births was only 1,262.

Diphtheria in Holyoke.—The latest public health bulletin issued from the office of the Massachusetts Commissioner of Health, presents the following statement relative to a small epidemic of diphtheria which occurred in Holyoke, Mass., during the late summer and fall of last year:—

"Twenty-nine cases of diphtheria were reported by the Holyoke Board of Health, the first on August 20 and the last on November 4. Since November 4 no cases have been reported from the Springfield district. The 29 cases occurred in 20 homes. In 15 families there was one case each; in two families, two cases each; in two families, three cases each; and in one family, four cases. The 10 houses were apartment houses. The ages of the patients varied from two to fourteen. The epidemic occurred soon after the opening of the Springdale School on September 8.

"There were three deaths, one in October and two in November.

"The probable cause of the epidemic was some mild unrecognized diphtheria bacillus carrier. It could not be ascertained whether the infection actually started within or without the school; that it spread among the school children, however, is a known fact, and undoubtedly by direct contact."

Epizoötic of Foot and Mouth Disease.—On January 22, the federal quarantine for foot and mouth disease in Massachusetts was raised from the counties of Barnstable, Berkshire, Dukes, Franklin and Nantucket. The only territory in the State where the disease now exists is at Dracut and in the vicinity of Rehoboth and Swansea. Portions of the counties of Bristol, Essex, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, Suffolk and Worcester are still, however, considered exposed areas.

In Connecticut the quarantine was, on the same day, raised from the counties of Fairfield, Litchfield, Middlesex, New London, Tolland and Windham, but portions of the counties of New Haven and Hartford are still considered as exposed area.

In Rhode Island the quarantine was raised from the counties of Bristol and Washington, but portions of the counties of Kent, Newport and Providence remain as exposed territory. Report from Providence on January 22 stated that on that day two more infected herds were discovered, one at Pawtucket and one at Pocasset.

Meningitis and Poliomyelitis in Massachusetts and New York.—The weekly report of the United States Public Health Service for January 22, states that during December, 1914, there were in Massachusetts twelve cases of cerebrospinal meningitis and six of poliomyelitis, and in New York, twenty-seven cases of meningitis and sixteen of poliomyelitis.

The Sanitation of Chinatown.—The Boston Board of Health has recently made an active investigation of sanitary conditions in the Chinese quarter of this city and has ordered extensive changes and improvements in that district. The alterations required are indicated by the following regulations which have been issued by the Board:—

"Every building must be equipped with two ways of entering and leaving, one in front and one in back. All sewer pipe openings must be permanently closed. By means of such openings in cellars, it is claimed, gamblers have been able during police raids to throw gambling implements wholesale into the sewers. All swinging gas fixtures must be replaced with stationary fixtures. The fire sprinkler system must be installed in every building occupied by eight or more families. Every basement must be ventilated to the satisfaction of the Health Board. Every basement must have proper exits and entrances. All stairways must be thoroughly repaired. All fire balconies must be repaired, and buildings lacking them must immediately install them."

Milk and Baby Hygiene Association.—The Boston Milk and Baby Hygiene Association has recently issued a small book to mark the close of the sixth year of its activities.

"From 1906 to 1910 there was an average death rate of 133 out of every 1000 babies born. Since the organization of this association the rate has steadily decreased until it was reported in 1914 the infant mortality was reduced to 100 out of 1000. It is hoped that in the coming year this rate may be even more decreased through the work of this society.

"During the past year the association provided medical supervision and nursing service for 4,097 babies, which is over one-fourth of the babies that are born here every year. It also cared for 20 per cent. of the babies that were under one year old.

"Free advice was given at 655 medical clinics, at which the attendance numbered 19,673. This is an increase of 43 per cent. over last year's work.

"Under the auspices of this society 12 milk stations have been maintained in the poorer districts of the city, where mothers could obtain tested milk at cost. The mothers in many homes were instructed by 14 specially trained nurses employed by the society. These nurses made 50,221 visits to homes and demonstrated to the mothers and children in the neighborhood of the milk stations through the 'Little Nurses' Club, the care of babies.

"Besides this work, the society has conducted an active campaign for spreading knowledge of the prevention of sickness and the proper care of babies.

"The cost of maintaining this work is about $25,000 a year. The Association has no endowment and the work has had to be done by means of public subscription. It is interesting to note that $10 provides medical and nursing supervision for one baby for nine months and $20 will care for two babies for one year. Fifty dollars pays for the expenses of a milk station for one week which has the registration of 2,000 babies. One thousand dollars provides a nurse and incidental expenses of one milk station for one year, and $300 provides service for one station through the hot weather.

"The headquarters of the Association are at 26 Bennet street. The officers for the coming year are: Chairman, Edward R. Warren; secretary, Michael M. Davis, Jr.; treasurer, Charles E. Mason; director, George R. Bedinger; medical directors, Drs. Arthur A. Howard and Harold A. Gale."

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending Jan. 26, 1915: Diphtheria, 79, of which 6 were non-residents; scarlatina, 89, of which 15 were non-residents; typhoid fever, 8; measles, 60; tuberculosis, 54, of which 1 was non-resident. The death-rate of the reported deaths for the week was 15.25.

Current Literature

SURGERY, GYNECOLOGY AND OBSTETRICS.

JANUARY, 1915.

1. *Porter, M. F. *Boiling Water Injections into the Thyroid Gland for Hyperthyroidism.*
2. *Clopton, M. B. *The Diagnosis and Treatment of Osteomyelitis.*

3. ***RODMAN**, W. L. *Pylorectomy and Partial Gastrectomy or Excision of the Ulcer-Bearing Area in the Treatment of Gastric Ulcer.*
4. **TUPPER**, T. *Transplantation of Ovaries.*
5. ***BUFORD**, C. G. *Goitre in Children.*
6. **WATERS**, C. A., **AND COLSTON**, J. A. C. *A Report of Three Cases of Fibrosclerosis of the Penis Treated by Roentgenization Without Improvement.*
7. **NOBLE**, G. H. *Intra-abdominal Dynamics and Mechanical Principles Involved in the Cause of Backward and Downward Displacements of the Uterus.*
8. **DOOLIN**, W. *Experiments on the Transplantation of Gastric Mucous Membrane.*
9. ***RUNYAN**, R. W. *Dislocation of the Semilunar Bone.*
10. ***CAMPBELL**, A. **MACK**. *Benign Tumors of the Stomach.*
11. **HANDLEY**, W. S. *Cancer of the Breast.*
12. **MORSE**, A. H. *Bilateral Congenital Caput Obstipum.*
13. **BONN**, H. K. *A Series of Liliform Appendices.*

1. Porter's conclusions from experimental and clinical data are that injections of boiling water into the thyroid gland should be substituted for the so-called medical treatment in patients with small thyroids and moderate symptoms of hyperthyroidism. This method is also peculiarly well adapted to the treatment of patients with moderate or severe symptoms and relatively small glands, and especially to cases wherein the hyperplasia is circumscribed. It is, therefore, well adapted to the treatment of patients who have had a lobectomy done and are still suffering from symptoms of hyperthyroidism with hypertrophy of the remaining lobe. Patients with large goiters and extreme symptoms of hyperthyroidism should be treated with the injections until they become safe surgical risks and then have the gland removed. Boiling water injections are not recommended in non-toxic goiter.

2. Clopton's article is beautifully illustrated and of distinct interest. It is a careful study.

3. Rodman, drawing from his own experience and that of other operators, is of the decided opinion that if the ulcer or ulcers are situated at or near the pylorus, as they are in about 80% of all cases, and the pyloric end of the stomach and proximal portion of the duodenum can be easily mobilized, pylorectomy, which gets rid of the existing ulcers, and prevents future ones to a large extent, removing as it does, four-fifths of the ulcer-bearing area, is certainly the operation of choice. The frequency with which hemorrhages, perforation and cancer, especially the latter, follow gastroenterostomy, show it to be wholly inadequate. Moreover, the radical operations of excision and pylorectomy are only slightly more dangerous, while far more beneficial in every way than gastroenterostomy.

5. Buford in an interesting article shows that in certain districts like Chicago, where sewage polluted water is used for drinking purposes, there is a frequent occurrence of goiter among children. This condition may also result from focal infections such as occur in tonsils, adrenals, and necrotic teeth.

9. Runyan states that many x-rays are often necessary to make a diagnosis of dislocated carpal semilunar. Closed reduction can be accomplished in about half the cases and should be tried irrespective of the length of time since the dislocation occurred. Open reduction is preferable to excision.

10. Campbell reviews the signs and symptoms of the different kinds of benign tumors of the stomach and describes a very interesting case of his own of papilloma of the stomach relieved by operation.

[E. H. R.]

THE LANCET.

DECEMBER 19, 1914.

1. ***GOODALL**, E. *The Croonian Lectures on Modern Aspects of Certain Problems in the Pathology of Mental Disorders. Lecture III.*
2. **BUCKLEY**, J. P. *A Method of Treating the Sac in the Radical Cure of Femoral Hernia.*
3. **GEMMILL**, W. *A Treatment for Prolapsus Ani in Young Children.*
4. **FAIRLIE**, H. P. *A Case of Delayed Chloroform Poisoning.*
5. **MARK**, L. *A Case of Acromegaly Two Hundred Years Ago.* (*Illustrated.*)
6. **JUDSON**, A. B. *Trigger Finger, Its Cause and Mechanism.*
7. **BOWLBY**, A. A. *The Treatment of Wounds in War.*
8. **NEWLAND-PEDLEY**, F. *Our Army's Teeth.*

1. In the third Croonian Lecture, Goodall discusses variations of the leucocytal count in dementia paralytica. He then discusses the relation of ferments and antiferments, their increase and decrease in mental cases. He considers the influence of intercurrent diseases, and the effects of tuberculin, leucocyte extract, etc. [J. B. H.]

BRITISH MEDICAL JOURNAL.

DECEMBER 12, 1914.

1. **ELLIOTT**, T. R. *Transient Paraplegia from Shell Explosives.*
2. **CHEATLE**, G. L. *Antiseptics in War.*
3. **SHIPLEY**, A. E. *Cockroaches.* (*Illustrated.*)
4. ***OVEREND**, W. *The Incipient Pulmonary Phthisis of School Children.*
5. **SHAW**, H. B. *The "Elderton" Method of Control in Testing the Value of New Tuberculin.*
6. **WOODCOCK**, H. DEC. *Artificial Pneumothorax.*
7. **HARMER**, W. D., **ET AL.** *Discussion on the Treatment of Inoperable Growths of the Throat and Nose.*
8. **FRASER**, J. S., **ET AL.** *Discussion on Oto-sclerosis.*
9. **MUECKE**, F. F. *Auditory Re-education.*
10. **HILL**, W., **AND ELPHICK**, G. J. F. *The Hemostatic Tonsil Guillotin.* (*Illustrated.*)
11. **WATSON-WILLIAM**, P. *The Intranasal Operative Treatment of Frontal Sinus Suppuration.*
12. **KELLEY**, A. B. *The Difficulties and Dangers of Exploratory Puncture of the Antrum of Highmore.*
13. **GOGARTY**, O. ST. J. *Latent Empyemata of the Nasal Accessory Sinuses.*

4. Overend presents a long and elaborate paper on incipient tuberculosis in school children from the point of view of the roentgenologist. He limits his discussion to children between the ages of 5 and 15, when the tuberculous process tends to become localized within the ducts and glands of the lymphatic system of the respiratory organs. This is practically the time of school life. He describes the radiological appearance of a healthy child's chest, and then takes up the anatomical and pathological considerations. He divides the bronchial glands into four classes: (*a*) tracheobronchial, (*b*) bifurcation, (*c*) hilum, and (*d*) pulmonary glands. The exact location of these glands and their pathological consideration, he describes.

He then discusses the channels of infection and dissemination; and among various possibilities, includes: 1, Caseation of glands. 2, Caseous pneumonia. 3. Eruption into a bronchus. 4. Eruption into a blood vessel. 5. Lymphatic dissemination.

The clinical symptoms and signs are at first obscure and indefinite, and due to a slow and chronic absorption of the products of bacillary metabolism and to the compression exercised upon adjoining structures by enlargement of the glands. He discusses these signs and symptoms in detail. He devotes a very short space to the physical signs.

He then takes up the radiological examination of the patient. The radiologist, in his opinion, should endeavor to decide as to: 1, Presence or absence of disease. 2, Its activity or latency. 3. Whether it is open or closed. 4, The course of dissemination. (In the reviewer's opinion, the radiologist has a large task before him if he can correctly answer these last three questions.—J. B. H.) He presents a few illustrative cases.

The presence of the following five conditions he believes enough to strongly suspect enlarged bronchial glands, probably of tuberculous origin: 1, Intermittent sudden cough in the absence of cases of pertussis. 2. Wasting, pallor, and tiredness. 3. A sub-febrile temperature, rising occasionally to 100°. 4, The presence of capillary veins and a growth of hair over the upper thoracic spines. 5, The absence of any obvious disease. [J. B. H.]

December 19, 1914.

1. *Bowlby, A. *The Work of the "Clearing Hospitals" During the Past Six Weeks.*
2. Rogers, L. *Permanganates in Sloughing and Tetanus-Infected Wounds.*
3. Wildey, A. G. *Iodine as an Antiseptic in Joint Injuries.*
4. Cathcart, C. W. *A Simple Form of Portable Dressing Sterilizer.*
5. *Bassett-Smith, P. W., et al. *Discussion on Kala-azar or Parasitic Splenomegaly and Allied Infections.*
6. Phillips, L. *Is Emetin Sufficient to Bring About a Radical Cure in Amoebiasis?*

1. Bowlby gives an interesting account of his work during the past three months with the British army in France. He describes in detail the functions of so-called "clearing hospitals." Such hospitals are essentially mobile units connected with the army. He describes the class of cases received and the general methods of treating the wounded.

5. Bassett-Smith presents an interesting description of kala-azar or parasitic splenomegaly and allied infections. His article is a general summary of these conditions, the methods of diagnosis employed, etc., although presenting nothing especially new. [J. B. H.]

The Practitioner.

December, 1914.

1. Goodhart, J. F. *The Injection Treatment for Hemorrhoids.*
2. Galloway, J. *Ointments — Their Therapeutic Value and Their Abuse.*
3. Freyer, P. J. *The Symptoms and Diagnosis of Stone in the Urinary Tract.*
4. McDonagh, J. E. R. *Venereal Diseases as We See Them Today.*
5. *Wynter, W. E. *The Diagnosis of Obscure Cases of Carcinoma.*
6. *Handley, W. S. *A Legally Established Case of Traumatic Carcinoma of the Breast.*
7. *Rivière, C. *The Pneumothorax Treatment of Phthisis.*
8. Bigg, G. S. *War Diseases—Typhus Fever, Enteric Fever, Dysentery and Cholera.*
9. Pim, A. A. *Carbolic Acid in the Treatment of Tetanus.*
10. Barber, H. W. *Urticaria Papulosa.*
11. *Richards, D. T. *Some Lung Affections in Influenza.*
12. Drinkwater, H. *The Longevity of Eminent Medical Men.*

5. Wynter discusses in a very general way some obscure cases of carcinoma in which the symptoms were very obscure, chronic, and generalized. He discusses the importance of these general symptoms in the diagnosis of this condition.

6. Handley discusses the question of carcinoma of the breast following trauma, and presents evidence for and against any relationship between the trauma and a subsequently developed cancer.

7. Rivière in a very general way discusses the pneumothorax treatment of phthisis, and presents various illustrative cases. On the whole, and in suitable instances, he is very favorably inclined toward this method of treatment. Suitable cases, in his opinion, are those who have had a thorough course of sanatorium treatment, and who seem, in spite of this, to be going down hill.

11. Richards, in a most interesting article, discusses some lung affections in influenza, with particular reference to migrating apical pneumonia. In regard to this, he quotes Dr. West as stating, "Influenza stands in no special relation to phthisis. . . though it greatly reduces the resistance of a body to the pneumococcus, it does not seem to do so in any special way to the tubercle bacillus." Dr. Richards agrees with this point of view, and finds that in only rare instances has tuberculosis developed after an influenza process of this kind. He presents various interesting cases showing that pneumonia due to influenza, and other pulmonary processes due to the same cause, must be regarded as serious conditions. Although he presents no exact bacteriological evidence to show that these cases were all due to the influenza bacillus, he apparently includes in this term "influenza" a variety of infection which in this country, for lack of a better word, we are apt to call "grip." [J. B. H.]

Deutsche Medizinische Wochenschrift.

No. 42. October 15, 1914.

1. Von Behring, E. *A Critical Analysis of the Theories in Regard to the Cause of Anaphylactic and Apotoxic Poisoning.*
2. Mathias and Blohmke. *The Pathology and Clinical Features of Human Anthrax.*
3. Dresel, E. G. *The Etiology and Diagnosis of Actinomycosis.*
4. Juliusberger. *Thiocol.*
5. Christian. *The Organization of Hospital Trains.*

No. 43. October 22, 1914.

1. *Jochmann. *Infectious Diseases of Wounds.* 1. *Tetanus.*
2. Schuster. *Diseases of Marching Soldiers: Their Etiology, Prophylaxis, and Treatment.*
3. Kuhn. *An Apparatus for the Injection of Local Anesthesia.*
4. Mombürg. *A Substitute for Bandages During the War.*
5. Buschke, A. *Venereal Diseases in War.*
6. Cahen, F. *A New Method for Transplantation of Nerves.*
7. *Epstein, H. *Foligan "Henning."*
8. Breuer, G. *A New Method of Packing and Labeling Negative Paper for Roentgen Exposure.*
9. Much, H. *From an Egyptian Journey.*
10. Schwalbe, J. *A Letter from Ernst v. Bergmann from the Turko-Russian War of 1877.*
11. *Schwalbe, J. *Salvarsan "Made in England."*

1. Jochmann reviews the history of tetanus, its mode of infection, its clinical course and its treatment. For the early laboratory diagnosis he advocates the injection of suspected material mixed with sterile pumice stone under the skin at the root of the tail of mice. The pumice acts as a foreign body and attracts the leucocytes, and usual pus organisms. In this way the oxygen is used up, anaerobic conditions are produced, and the tetanus organisms grow rapidly,

producing characteristic symptoms in two or three days.

For the cultural diagnosis of the disease, Jochmann uses for medium grape-sugar bouillon. The culture is made according to ordinary technic, and the surface is covered with sterile oil. The culture is heated to 70° C., which kills off any non-spore-bearing organisms. After this, the tetanus organisms grow at 37° in pure culture.

In the treatment of tetanus, Jochmann places great reliance upon active serum treatment. He gives 100 antitoxin units intraspinally every day or two as long as convulsions are present. At the same time he injects intramuscularly, near the wound, 100 units daily, and powders the wound with dried antitoxic serum. In this way he hopes to neutralize as much toxin as possible. Finally, on the first day of treatment, he injects 100 units intravenously.

Such active treatment has not had the brilliant results which follow the use of anti-diphtheritic serum. Nevertheless, Jochmann believes that the more energetic the anti-tetanic treatment is, and the earlier in the disease it is begun, so much more favorable are the results.

Jochmann mentions the magnesium sulphate treatment, but has had too little personal experience with it for a definite opinion as to its practical value.

For symptomatic treatment, Jochmann advises morphia and chloral in large doses and either alone or combined. The patients must be well fed. When unable to eat by mouth they must be fed by rectum or subcutaneously. For the latter purpose, Jochmann has given sterile oil in as large doses as 100 grams.

7. Foligan "Henning" is a preparation of powdered orange leaves made by the firm of Henning. Epstein has used it as a sedative in a series of cases. On the whole he feels that Foligan is valuable, yet he has met with several cases in which the drug appeared to have no action.

11. Schwalbe writes a bitter article commenting upon the fact that Burroughs, Wellcome and Company are attempting to obtain rights to sell their own new products under the names of salvarsan and neosalvarsan, thus encroaching upon the patents of Höchst. Schwalbe considers that such action is unjustifiable even in war, but believes that if the London firm undertakes the manufacture of salvarsan, the injuries produced by the new drug will produce a new "English" disease, and will leave a lasting monument in the English literature.

[R. F.]

No. 44. October 29, 1914.

1. *Czerny, V. *The Treatment of Tetanus.*
2. Falk, A. *Subcutaneous Injections of Magnesium for the Treatment of Tetanus.*
3. Schmidt, A. *Gun-shot Wounds of the Lung.*
4. Ledderhose, G. *The Economical and Rapid Treatment of Wounds.*
5. *Friedrich, E. P. *Aural Problems in War Surgery.*
6. Kümmel, W. *Ear Diseases in the Field.*
7. Stein, A. E. *Medical Photography.*

1. Czerny mentions the conditions under which tetanus will develop. Bullets rarely produce the disease, but more favorable wounds are those caused by shrapnel when large skin areas are laid bare. Prophylaxis is most important. Czerny advises prophylactic serum in any doubtful case. The best treatment is antitoxin, given either intraspinally, endoneurally, or intravenously. The most effective drugs to alleviate symptoms are morphia, chloral and paraldehyde.

5. Friedrich discusses in a general way the injuries to the ear which he has seen during the war and describes their treatment. Injuries to the external ear with indirect injury to the drum are common. One of the frequent diseases of the external ear also is furunculosis. The middle ear may occasionally be wounded by stabbing, but more often by splinters of shot or by wounds of the skull. Acute otitis media develops among troops from time to time sporadically. The internal ear can be injured directly by bullets or stab wounds, and indirectly by detonation. The treatment is largely symptomatic, since it is difficult to treat these diseases satisfactorily at the front. [R. F.]

No. 26. November 12, 1914.

1. Kocher, T. *The Treatment of Severe Tetanus.*
2. v. Behring, E. *The Use of Anti-tetanic Serum.*
3. *Kromayer. *X-ray and Light Treatment to Hasten the Healing of Gunshot Wounds.*
4. Stachow and Wierwiorowski. *First Impressions of War Surgery.*
5. Strebel, J. *Anosmia and Traumatic Enophthalmos.*
6. *Engel. *Urinary Excretion in Infants.*
7. Schnée, A. *Further Comments on the Treatment of Diabetes Mellitus with Ferments.*
8. Roerdansz, W. *A Simple and Complete Method for Counting Blood Corpuscles.*
9. Adam. *The German, Austrian, French, Russian, and English Conditions of Military Sanitation.*

3. Since x-ray and sunlight stimulate the growth of epithelium so definitely in chronic ulcerative processes, Kromayer has used them for the same purpose in the treatment of wounds which present large ulcerated surfaces. He advocates small dosage of x-rays and states that any x-ray burn of the skin must be avoided. In using sunlight or carbon as a substitute, enough exposure is given to produce a slight erythema. On the whole, Kromayer believes that much time can be saved in the healing of wounds by the proper use of these rays.

6. Engel has undertaken to determine the amount of urine excreted by normal infants, the frequency of urination and how large are the individual portions excreted. The method of collecting the specimens consisted in connecting to the urinals used, electrodes, which in turn were attached to a bell. Thus when the subject urinated, a nurse was called, who recorded the time and the amount of urine. The amount of urine depended on the fluid intake. If an infant drinks 800 c.c. of liquid, normally about 500 c.c. of urine are excreted. An infant urinates between 20 and 30 times in 24 hours. Engel found that during periods of quiet, much less urine was excreted than during periods of muscular activity. Thus, when the child slept there would be no urine for two or three hours, while if the child were awake it urinated every few minutes. Finally, Engel found that the average amount of urine obtained at each emptying of the bladder was between 12 and 18 c.c., although in isolated cases 70 to 90 c.c. were recovered. The amount of individual specimens depended closely on the degree of muscular activity. [R. F.]

Il Policlinico.

December, 1914.

SURGICAL SECTION.

1. *Desderi, P., and Serafini, G. *Bacteriologic Researches on Bone in the Cadaver.*
2. Mosti, R. *Surgical Intervention in Paralysis of the Radial Nerve Following Fractures of the Humerus.*
3. Brancati, R. *The Ulcerative Gastro-Intestinal Effects of Experimental Resection of the Lumbar Sympathetic. (Conclusion.)*
4. Bevacqua, A. *Spontaneous Perirenal Hematoma. (To be continued.)*

1. From Pagliani's hygienic institute at the royal university of Turin, the authors report results of cul-

tural experiments on the bones of 28 recently deceased human subjects. Of these, 15 were found completely sterile, in 2 the streptococcus was found and in 11 the staphylococcus. The subject is of importance in relation to homo-necro-transplantation of bone tissue.

[R. M. G.]

Miscellany.

REGULATIONS OF STATE DEPARTMENT OF HEALTH.

At the meeting of the Public Health Council of the State Department of Health on January 19, 1915, the following regulations were adopted, governing the appointment and promotion of district health officers, to be appointed within the provisions of Chapter 792, of the Acts of 1914.

1 *Grades of District Health Officers.* There shall be four grades of District Health Officers, *viz*: A, B, C, and D.

2 *District Health Officers appointed only to Grade D.* Candidates for the position of District Health Officer, after passing a successful examination, shall be eligible for appointment to Grade D, except in the cases specified in Section 14.

3 *Form of application for appointment.* Candidates for the position of District Health Officer must make application addressed to the Commissioner of Health in their own handwriting, asking permission to appear before the Board of Examiners. Candidates shall state their age, date and place of birth, present legal residence, names of colleges or institutions of learning of which they are graduates, date of graduation, and shall furnish testimonials as to their professional experience and moral character.

4 *Age limit.* No candidate will be eligible to appear before a Board of Examiners whose age is less than twenty-three years or more than thirty-six, except in the cases cited in Section 14.

5 *Professional requirements.* Candidates shall be graduates of an incorporated medical school or shall have had at least five years' experience in public health work and sanitary science.

6 *Citizenship.* All candidates must be citizens of the United States, and preference in appointment shall be given to residents of Massachusetts.

7 *Physical examination.* Candidates for appointment must pass a satisfactory physical examination before a Board of Examiners except as provided in Section 14.

8 *Board of Examiners.* The Board of Examiners shall consist of three or more members. These members shall be selected by the Commissioner of Health from the Public Health Council or other officials of the State Department of Health.

9 *Scope of examination.* All examinations of candidates for appointment as District Health Officers shall be conducted by a Board of Examiners and the examination shall include a physical examination and such oral, written and practical tests as the Board deems necessary in the subjects outlined in the succeeding sections. Experience and fitness shall also be rated by the Board of Examiners.

10 *Subjects for written examination.* All candidates for appointment must pass a satisfactory written examination in Communicable Diseases, Hygiene and Sanitation, Preventive Medicine, Vital Statistics, Pathology and Bacteriology.

11 *Compensation.* The compensation of District Health Officers shall be as follows:

Grade A.	$3500.00
Brade B.	3000.00
Grade C.	2500.00
Grade D.	2000.00

12 *When promoted.* After five years' service in any grade the District Health Officer is entitled to examination to determine his eligibility for promotion to the next higher grade.

13 *Examinations for promotion.* Examinations for promotion shall be conducted by a Board of Examiners, who shall take into account the efficiency record of the candidate as well as his professional and physical fitness. Failing first examination a District Health Officer may be given a second examination after one year. Failing two successive examinations, such a District Health Officer shall be dropped from the rolls.

14 *Exemptions in favor of candidates now in the service.* Candidates for appointment as District Health Officers who are now (January, 1915) State Inspectors of Health in the service of the State Department of Health shall be exempt from certain provisions of these regulations, as follows:

(a) The age limit of thirty-six years is waived.

(b) If successful in passing the entrance examination they shall be eligible for appointment to Grade C, provided they have had five years' service as State Inspector of Health of the State Board of Health.

(c) They shall be given credit for service as State Inspector of Health of the State Board of Health in excess of five years in fixing the date of their eligibility for promotion to Grade B.

(d) If successful in passing the entrance examination with distinction they shall be eligible for appointment to Grade B and chall be eligible for promotion to Grade A after two years' service in Grade B.

15 *Tenure of office.* A District Health Officer may be removed from office by the Commissioner of Health because of failure to pass two successive examinations for promotion, or because of gross misconduct or inefficiency, but only after the accused officer has been furnished with a

copy of the charge made against him and given a hearing thereon by the Public Health Council.

It was voted to fix the date of the examination for Tuesday, February 16, and Wednesday, February 17, 1915, at 9.00 a. m., at the office of the State Department of Health, and it was further voted to require all applications for examination to be received in the office of the State Department of Health on or before February 10, 1915.

A. J. McLaughlin, M.D.
Commissioner of Health.

THE AMBULANCE CONSTRUCTION COMMISSION.

The present European war is the first in which field motor-ambulances have been extensively used. It was inevitable that many defects should be found in existing types, and in various quarters experts began to ask whether something could not be done to standardize the patterns and to improve the type. At the instance of Mr. Henry S. Wellcome, the founder of the Wellcome Bureau of Scientific Research, a Commission has been formed, and the names of members show at once that the matter is regarded as of first importance by those most intimately connected with the welfare of the wounded soldier.

Sir Frederick Treves, whose long experience and distinguished service specially fit him for the task, has consented to be the Chairman. The Admiralty is represented by the Director General of the Medical Department, R. N., while the Quarter Master General to the Forces and the Acting Director General, Army Medical Service, represent the War Office. The British Red Cross Society is, of course, represented by Sir Frederick Treves, and the St. John Ambulance Association by Sir Claude Macdonald and Sir John Furley. The remaining members are all experts. This Commission will first and foremost act as a judging committee for the award of prizes of the value of £2000 provided by the Wellcome Bureau of Scientific Research. These prizes are offered for the best designs of an ambulance-body which shall fit a standard pattern motor chassis for field motor ambulances. The last day for the receipt of competing designs is June 30, 1915. It is hoped that the competition will bring in a number of ingenious designs, from which the ideal field ambulance body will be evolved.

It may be asked why the competition is restricted to designs for a body and not for a complete ambulance including a chassis. The reason is that a chassis takes much longer to build than a body, and that, when war breaks out, it is impossible to get at short notice anything like a sufficient number of any one type of chassis. On the other hand, a standardized body to fit any chassis of approved dimensions can be constructed in numbers at comparatively short notice. And a perfected body is badly wanted to ensure complete comfort for the wounded.

It is hoped that the information obtained by the competition, and in other ways, will be published in some permanent form, available for future reference. Probably in addition to one design of special excellence, there will be submitted various ingenious suggestions which may be incorporated in the pattern design approved by the Commission. For these, a portion of the prize-money has been set apart. The first prize is of one thousand pounds, the second of five hundred, and the third of three hundred pounds. All details of conditions may be obtained from the Secretary, the Ambulance Construction Commission, 10 Henrietta Street, Cavendish Square, London, W. The competition is open to citizens of all nations.

INSANITY IN MASSACHUSETTS.

The recently published annual report of the Massachusetts State Board of Insanity records the work of that body and of the hospitals under its charge during the past year. The report shows that one out of every 271 persons in this Commonwealth is insane.

"The insane being cared for in state institutions number 13,497, an increase for the year of 396. The board has under its care 17,386 persons, of whom 14,122 are insane, 2513 feeble-minded and 624 epileptic.

" 'The capacity of the institutions is now 13,971, and this includes new accommodations for patients, which have recently become available. Notwithstanding this addition, there is, at the present time, an overcrowding of 231. As the Legislature of 1914 granted no appropriations for patients, there are no new buildings in the process of construction. It will thus be seen that, provided the increase for the coming year is at least 442—the increase of the past year—there will be, at the close of 1915, an overcrowding of 633, while any appropriations granted by the Legislature of 1915 will not be available until from one and one-half to two years later, when the overcrowding will be still greater. It is, therefore, necessary that appropriations for accommodations for 525 patients and 254 nurses planned for this year be granted.'

"An increase of 274 this year in the number of feeble-minded being cared for is reported. The board says that immediate provision should be made for the feeble-minded because of the large number of this class of persons in the state.

"Three recommendations are made by the board: (1) To make the Foxboro State Hospital a receiving hospital for the insane, (2) to change the character of the Worcester State

Asylum to a receiving hospital, and to change its name to the Grafton State Hospital, and (3) to purchase land as an adjunct to the Northampton State Hospital so as to provide for the insane in western Massachusetts."

The report also recommends the following methods in treating mental deviates:—

"1. Examine all defective delinquents in all state institutions.

"2. Systematize the work so that the personal history, the mental state of every person confined and tendency to crime are recorded.

"3. Make every insane person useful during his detention.

"4. Increase the industrial work of every hospital with a view at some time to make all insane institutions in the state self-supporting.

"5. Make it possible to have more receiving hospitals. The only authorized receiving hospital at present is at Medfield. It is proposed to have Worcester and Foxboro also as receiving hospitals."

◆

EXAMINATION OF CANDIDATES FOR ASSISTANT SURGEON.

UNITED STATES PUBLIC HEALTH SERVICE.

Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, 3 B Street, S.E., Washington, D. C., and at the Marine Hospitals of Boston, Mass.; New York, N. Y.; Chicago, Ill.; St. Louis, Mo.; Louisville, Ky.; New Orleans, La., and San Francisco, Cal., on Monday, March 8, 1915, at 10 A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Assistant surgeons receive $2000, passed assistant surgeons $2400, surgeons $3000, senior surgeons $3500, and assistant surgeon generals $4000 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For invitation to appear before the board of examiners, address "Surgeon-General, Public Health Service, Washington, D. C."

◆

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the aid of the Belgian profession, for the week ending January 23, 1915.

Diplomatic arrangements have just been completed whereby drugs and instruments for civilian physicians may be sent into Belgium. Recent advices from Dr. Herbert Spencer of London show that our Belgian colleagues are literally starving.

Three hundred additional boxes of food have been purchased at a cost of $660.00.

Contributions:

Dr. W. A. Coventry, Duluth, Minn.		$ 10.00
Dr. A. William Reggio, Boston, Mass.		25.00
Dr. Edward B. Heckel, Pittburg, Pa.		25.00
Dr. T. R. Williams, Punxsutawney, Pa.		10.00
Dr. J. Knox Simpson, Jacksonville, Fla.		10.00
Sonoma Co. Medical Society, Sebastopol, Cal.		50.00
Anonymous—E., Pittsburg, Pa.		10.00
Dr. A. B. Hirsh, Philadelphia, Pa.		5.00
Dr. Henry Eastman, Pittsburg, Pa		10.00
Dr. H. S. Stennsland, Syracuse, N. Y.		2.00
Washington Co. Medical So., Marietta, Ohio		25.00
Dr. Lewis S. Pilcher, Brooklyn, N. Y.		25.00
Dr. M. Iverson, Stoughton, Wis.		5.00
Dr. A. H. Traver, Albany, N. Y.		5.00
Dr. Carl B. Drake, St. Paul, Minn.		5.00
Dr. Leonard Freeman, Denver, Colo.		5.00
Dr. Howard C. Taylor, New York, N. Y.		25.00
Dr. Walter F. Donaldson, Pittsburg, Pa.		5.00
Deer Lodge Co. Medical So., Anaconda, Mont.		75.00
Dr. W. S. Zimmerman, Spartansburg, S. C.		10.00
Dr. H. MacVicker Smith, Pittsburg, Pa.		5.00
Dr. Ethel D. Brown, New York, N. Y.		5.00
Dr. Brown Pusey, Chicago, Ill.		25.00
Total		$377.00
Previouly reported receipts		$1414.00
Total receipts		$1791.00
Previously reported disbursements	$990.00	
Disbursements week ending Jan. 23	660.00	
Total disbursements		$1650.00
Balance		$ 141.00

F. F. SIMPSON, M.D., *Treasurer.*

◆

NOTICES.

Physicians visiting the city will be cordially welcomed at the following clinics on the days and hours specified.

BOSTON CITY HOSPITAL.—After January 1, 1915, public operations will be performed in the Surgical Amphitheatre each week, on Thursdays, Fridays and Saturdays, at 10 o'clock.

Thursday: First Surgical Service. Dr. Blake.

Friday. Third Surgical Service. Dr. Nichols, and Fourth Surgical (G-U) Service, Dr. Thorndike.

Saturday: Second Surgical Service. Dr. Lund.

Notice of these operations will be sent to anyone expressing his desire to receive it.

CARNEY HOSPITAL.—Dr. Bottomley and Dr. Mahoney will hold an operative surgical clinic every Wednesday at 9 A.M., and at the same hour on the same day Dr. W. R. MacAusland will hold an orthopedic clinic. All physicians are welcome to attend.

MASSACHUSETTS GENERAL HOSPITAL.—1. A surgical clinic Friday, at 9 in the out-patient amphitheatre. 2. Operations in the Bigelow amphitheatre Saturdays from 10 to 1. 3. Operations in the Surgical Building except Sunday, from 9 to 1. 4. Daily surgical ward visits at which visiting physicians will be welcome. 5. Clinic in medicine, Monday and Thursday at 9, by Dr. D. L. Edsall. 6. Clinic in neurology, Tuesday at 9, by Dr. E. W. Taylor. 7. Clinic in medicine and pathology Tuesdays at 12, by Drs. R. C. and H. Cabot and O. Richardson. 8. Clinic in dermatology, Thursday at 9, by Dr. C. J. White.

Peter Bent Brigham Hospital.—Physicians visiting the city will always be cordially welcomed at the Peter Bent Brigham Hospital.

The medical visit takes place regularly every morning beginning at 10 o'clock.

Operations are usually going on throughout the forenoon in the surgical amphitheatre.

The surgical clinic is held in the clinical amphitheatre on Wednesdays at 12.30 p.m.

The medical clinic is held in the clinical amphitheatre on Mondays at 12.30 p.m.

The clinico-pathological demonstration is held in the clinical amphitheatre on Fridays at 3.30 p.m.

SOCIETY NOTICE.

Middlesex South District Medical Society.— Owing to a change in the program of our meetings, the next meeting of the Middlesex South District will be held at the Massachusetts General Hospital, Out-Patient Amphitheatre, on Wednesday, Feb. 10, 1915, at 12 o'clock noon. Dr. Richard C. Cabot of Boston will speak on "Some Puzzling Cases Before and After Death."

Lyman S. Hapgood, M.D., *Secretary.*

RECENT DEATHS.

Dr. James M. Bodine, who died on January 25, at Louisville, Ky., was born in 1830. He was for many years dean of the medical department of the University of Louisville.

Dr. Harry Clifton Boutelle, who died on January 24 of pneumonia at Danvers, Mass., was born in Fitchburg on June 21, 1875. He received the degree of M.D. from the Harvard Medical School in 1899, settled at first in the practise of his profession at Boston where he served for several years as a school physician, and removed to Danvers in 1902. He was a member of the American Medical Association, a Fellow of The Massachusetts Medical Society and a member of the Essex District Medical Society. He is survived by his widow and by one son. At the time of his death he was a Councillor of The Massachusetts Medical Society from the Essex South District.

Dr. Max Heyde, a docent for surgery at the University of Marburg, Germany, has died of typhoid fever contracted while serving in a medical capacity with the German army.

Dr. William H. Langdon, who died in Wayland, Mass., on January 26, was born in Brookline, Mass., in 1871. He graduated from Tufts Dental School in 1896 and since that time has practised his profession in Boston.

Dr. Herbert James Pratt, who died at Plymouth, Mass., on January 21, was born in Medford, Mass., in 1842. He received the degree of A.B. from Harvard in 1863 and that of M.D. in 1868. He practised his profession for ten years in Minneapolis, Minn., and subsequently had devoted himself extensively to travel and study abroad. He was unmarried.

Dr. Benjamin Sharp, who died on January 21 at Beaufort, N. C., was born in Germantown, Pa., on November 1, 1858. After studying at Swarthmore College, he received the degree of M.D. from the University of Pennsylvania and subsequently studied abroad in Bavaria, Berlin, Leipzig and Naples.

In 1883 Dr. Sharp became professor of invertebrate zoölogy at the Academy of Natural Sciences, Philadelphia, and two years later became professor of zoölogy at the University of Pennsylvania. He was a life member and corresponding secretary of the Academy of Natural Sciences, for which he made several expeditions, collecting in the Caribbean Islands in the winter of 1888-9, and in the Hawaiian Islands in the summer of 1893. He also made an expedition to Alaska and Siberia on the United States revenue cutter *Bear*. He was a member of the American Philosophical Society, Boston Society of Natural History, and was vice-president of the Nantucket Historical Association. Dr. Sharp served in the Massachusetts Legislature from 1910 to 1913 as representative from Nantucket. Dr. Sharp had been, at various times, a resident of Brookline and Nantucket, Mass. In 1901 he acted as zoölogist of Commander Peary's first Arctic expedition.

Dr. Sir Robert Simon, professor of therapeutics at the University of Birmingham, England, has died recently at the age of 84.

Dr. Clinton Wagner, first professor of laryngology and rhinology in the New York Post-Graduate Hospital and Medical School, has recently died in Switzerland at the age of 74.

Dr. Levi Francis Warner, who died on January 20 in New York City was born at South Glastonbury, Conn., in 1864. He received the degree of A.B. from Williams College in 1885 and that of M.D. from the Columbia University Medical School in 1889. He was for eight years a member of the New York Board of Police Surgeons, physician-in-chief to the New York Dispensary and visiting physician to St. Francis Hospital. He was a member of the New York County Medical Society and of the St. Luke's Hospital Alumni Association.

BOOKS AND PAMPHLETS RECEIVED.

Text Book of Surgical Operations, by Prof. Fedor Krause, M.D. Translated and edited by Albert Ehrenfried, M.D. Vol. I. Rebman Company. New York. 1915.

Autogenous Serum in the Treatment of Psoriasis, by Howard Fox, M.D. Reprint.

Harvard University Catalogue. 1914-1915.

International Clinic Week at the New York Polyclinic Medical School and Hospital during the International Surgical Congress, April, 1914.

The Routine Administration of Ether in Measured Dosage, by Albert H. Miller, M.D.

Physical Examination of Workers, by J. W. Schereschewsky. Reprint No. 234. Public Health Report.

The Nervous System and Its Conservation, by Percy Goldthwait Stiles. W. B. Saunders Co.

Transactions of the American Surgical Society. Vol. 32.

Infection, Immunity and Specific Therapy, by John A. Kolmer, M.D. W. B. Saunders Co. 1915.

Dissection Methods and Guides, by David Gregg Nethany. W. B. Saunders Co. 1915.

Diagnostic and Therapeutic Technic, by Albert S. Morrow. W. B. Saunders Co. 1915.

A Laboratory Manual and Text-book of Embryology, by Charles W. Prentiss. W. B. Saunders Co. 1915.

Fisk & Arnold
Established 1865
Oldest Manufacturers in New England of
ARTIFICIAL LIMBS

For Every Amputation.

United States Government Bonded Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates an arm for amputation above elbow with spring thumb, detachable hand and elbow locking device.

Full descriptive catalogue on application.

3 Boylston Place, Bostn, Mass.
Telephone, Oxford 3684-M.

If you want
To See
A BELLYBAND
That unites with it
A CORSET
That cannot
WORK UP
That can be worn for
ENTEROPTOSIS
Hernia, floating kidney and relief of female disturbances from pressure,
Call Oxford 3160
and let MRS. STOCKWELL, Mgr.,
THE NATURAL LINE CORSET COMPANY
demonstrate it to you.

INDEX TO ADVERTISEMENTS

Benger's Food........16
Boston Laboratories........10

Eastman Kodak Co........14

Fisk & Arnold........Artificial Limbs 15
Fisk Hospital........Brookline, Mass. 13
For Sale........6
French Lick Springs........Pluto Water 14

Harvard Dental School........10
Harvard Medical School........10
H-O Oatmeal........15

Jefferson Medical College of Philadelphia........10
Journal Talks to Advertisers........9

King's Puremalt Department........4
Knoll & Co........9

Lea & Febiger........Publishers 7

Macullar Parker Co........Clothing 8
Mahady, E. F. Co........13
Medical School of Maine........Bowdoin College 10
Medical Echo........6
Medico-Chirurgical College of Philadelphia........10
Mellin's Food Co........8
Millet Tuberculosis Sanatorium........13

Natural Line Corset Co........15
New York Polyclinic Medical School........10
New York University........Medical Department 11
Notices........6
Nurses' Directory........11

Parke, Davis & Co........Chemists 5
Phillips........Chemists 8
Pomeroy Company........16
Professional Cards........12, 13

Radium Chemical Co........5

Saunders, W. B. Co........Books 1
Schering & Glatz........2
Sharp & Dohme........Chemists 4
Sherman's Bacterins........13
Storm, Katherine L., M.D........7
Sundelius, Gustaf........Masseur 11

Tufts College Medical School........11

Wanted........6
Warren Chambers........6
Welch's Grape Juice........2

Where does H-O belong in "diet and regimen?"

Wherever a good oatmeal is wanted.

Many physicians are careful to specify H-O because they feel confident that H-O will be thoroughly cooked.
H-O requires only 20 minutes cooking. It is steam-cooked for over 2 hours at the mill.

H-O
THE *ONLY* STEAM-COOKED
Oatmeal

The H-O Company, Buffalo, N.Y.
Makers of H-O, Force, *and* Presto.

Benger's Food is unique in combining the two natural digestive principals Amylopsin *and* Trypsin, in such a manner that these become active while the Food is being prepared with fresh new milk.

The digestive action is carried to any extent the physician may prescribe by allowing the Food to stand 15 or more minutes; it is stopped by boiling up.

Benger's Food has been prescribed by the Medical Profession for 35 years.

Benger's Food

Reg. U.S. Pat. Off.

"Benger's Food has by its excellence, established a reputation of its own." British Medical Journal (*London, Eng.*)

FOR INFANTS, INVALIDS AND THE AGED,

is pre-eminent in all conditions of digestive debility.

A physician's sample, with full particulars, will be sent post free to any member of the Medical Profession on application to—

BENGER'S FOOD LTD., 92, WILLIAM STREET, NEW YORK.
Manufactory—MANCHESTER, Eng.
Branch Office—SYDNEY (N.S.W.) 117, PITT STREET.—Depots throughout Canada.

M 64a U.S.

POMEROY

FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY
41 WEST STREET, BOSTON

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

HARVARD COLLEGE LIBRARY
FEB 11 1915
CAMBRIDGE

THE BOSTON Medical and Surgical JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 6

THURSDAY, FEBRUARY 11, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

VENEREAL DISEASE AND PROSTITUTION. *By Walter D. Bieberbach, M.D.*, Worcester, Mass.

DIFFERENTIAL DIAGNOSIS AND INDICATIONS FOR TREATMENT OF TUMORS OF THE NECK. *By Oliver C. Smith, M.D.*, Hartford, Conn.

RENAL INFECTIONS. *By William H. Robey, Jr., M.D.*, Boston.

CLINICAL DEPARTMENT

A CASE OF HUMAN RABIES. *By Harry Linenthal, M.D.*, Boston.

MEDICAL PROGRESS

REPORT OF PROGRESS IN MENTAL DISEASES. PART I. *By Henry R. Stedman, M.D.*, Brookline, Mass.

EDITORIALS

ACTION OF THE ASSOCIATION OF ANATOMISTS REGARDING COLLEGE WORK IN PREPARATION FOR HUMAN ANATOMY.

REORGANIZATION OF THE BOSTON BOARD OF HEALTH.

PROSTITUTION AND VENEREAL DISEASE.

MASSACHUSETTS STATE HEALTH DEPARTMENT.

MISCELLANEOUS MATTERS OF MEDICAL LEGISLATION.

For complete table of contents, see first text page.

Ready—Mallory's New Pathology

Dr. Mallory's Pathologic Histology is an original work, based on *the lesions themselves—not* on the literature, although the opinions of other investigators are not ignored. Its 683 superb illustrations are new and they are all printed directly in the text, even the 124 in colors. There are no troublesome inserts. Dr. Mallory presents *pathology* from the morphologic point of view, first by ascertaining the cellular elements out of which the various lesions are built up; then by tracing the development of the lesions from the simplest to the most complex. Pathology is so presented that you are able to trace backward from any given end-result, such as sclerosis of an organ (cirrhosis of the liver, for example), through all the various acute lesions that may terminate in that particular end-result to the primal *cause* of the lesion.

Dr. H. Gideon Wells, *University of Chicago*

"It is a splendid book and gives more valuable information than any other book of the kind I know. I have already given it a test in my class work, and I find it extremely valuable."

Octavo of 677 pages, with 497 figures containing 683 original illustrations, 124 in colors. By FRANK B. MALLORY, M.D., Associate Professor of Pathology at Harvard University Medical School. Cloth, $5.50 net; Half Morocco, $7.00 net.

Mallory and Wright's Pathologic Technic

FIFTH EDITION

This work gives you the technic of postmortems, bacteriologic methods, bacteriology of the various diseases, histologic methods, and the special methods used in *clinical bacteriology and pathology*—in examining uterine scrapings, puncture fluids, sputum, gastric contents, feces, urine, etc.

Octavo of 507 pages, illustrated. By F. B. MALLORY, M.D., Associate Professor of Pathology, Harvard Medical School; and J. H. WRIGHT, M.D., Director Pathological Laboratory, Massachusetts General Hospital. Cloth, $3.00 net.

W. B. SAUNDERS COMPANY West Washington Square, Philadelphia

Entered at the Post-office at Boston as second-class matter

Where does H-O belong in "diet and regimen?"

Wherever a good oatmeal is wanted.

Many physicians are careful to specify H-O because they feel confident that H-O will be thoroughly cooked. H-O requires only 20 minutes' cooking. It is steam-cooked for over 2 hours at the mill.

H-O
THE *ONLY* STEAM-COOKED
Oatmeal

The H-O Company, Buffalo, N.Y.
Makers of H-O, Force, *and* Presto.

THE DUCTLESS GLANDS

We are able to supply limited quantities of those mentioned below, *with full assurance of their identity and quality.* Their field of usefulness has not been well defined, and the evidence so far available is mainly suggestive. In view of these facts, we supply the material without recommendation.

PARATHYROIDS (DESICCATED).

Tablets, each equivalent to 3/5 grain of the fresh gland.

Employed in such diseases as paralysis agitans, chorea, epilepsy and tetany.

PINEAL GLAND (DESICCATED).

Tablets, each equivalent to 1/2 grain of the fresh gland.

Suggested for use in treating mentally defective children, particularly in cases where there is no physical defect. Of possible value in mongolism.

ANTERIOR LOBE OF THE PITUITARY BODY (DESICCATED).

Tablets, each containing 2 1/2 grains of the desiccated tissue.

Of possible value in peculiar disturbances of metabolism, delayed development (both mental and physical), and certain derangements of the genito-urinary system.

LITERATURE SUPPLIED ON REQUEST.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.

HARVARD COLLEGE LIBRARY
FEB 11 1915
CAMBRIDGE, MASS.

The Boston Medical and Surgical Journal

Table of Contents

February 11, 1915

ORIGINAL ARTICLES.

VENEREAL DISEASE AND PROSTITUTION. *By Walter D. Bieberbach, M.D.*, Worcester, Mass. 201
DIFFERENTIAL DIAGNOSIS AND INDICATIONS FOR TREATMENT OF TUMORS OF THE NECK. *By Oliver C. Smith, M.D.*, Hartford, Conn. 208
RENAL INFECTIONS. *By William H. Robey, Jr., M.D.*, Boston 217

CLINICAL DEPARTMENT.

A CASE OF HUMAN RABIES. *By Harry Linenthal, M.D.*, Boston 221

MEDICAL PROGRESS.

REPORT OF PROGRESS IN MENTAL DISEASES. PART I. *By Henry R. Stedman, M.D.*, Brookline, Mass. 223

REPORTS OF SOCIETIES.

MASSACHUSETTS MEDICAL SOCIETY. WORCESTER DISTRICT MEDICAL SOCIETY. MEETING OF NOVEMBER 11, 1914 226

BOOK REVIEWS.

Annual Report of the Surgeon-General of the Public Health Service of the United States for the Fiscal Year 1914 228
A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., LL.D. 228

EDITORIALS.

ACTION OF THE ASSOCIATION OF ANATOMISTS REGARDING COLLEGE WORK IN PREPARATION FOR HUMAN ANATOMY 229
REORGANIZATION OF THE BOSTON BOARD OF HEALTH 231
PROSTITUTION AND VENEREAL DISEASE 231
MASSACHUSETTS STATE HEALTH DEPARTMENT 232
MISCELLANEOUS MATTERS OF MEDICAL LEGISLATION 232
MEDICAL NOTES 233
CURRENT LITERATURE 235

CORRESPONDENCE.

PERSONAL AND SURGICAL CLEANLINESS. *Hugh P. Greeley, M.D.* 237
THE EMPLOYMENT OF NURSES SUSPENDED FROM TRAINING SCHOOLS. *Sara E. Parsons, R.N.* 238
AN EARLY INVESTIGATOR IN ANESTHESIA. *F. H. McMechan* .. 239

MISCELLANY.

PHILIPPINE CIVIL SERVICE EXAMINATIONS 239
BELGIAN PHYSICIANS' RELIEF FUND 240
NOTICES, APPOINTMENTS, RESIGNATIONS, RECENT DEATHS, BOOKS AND PAMPHLETS RECEIVED 240

Original Articles.

VENEREAL DISEASE AND PROSTITUTION.*

BY WALTER D. BIEBERBACH, M.D., WORCESTER, MASS.

IN 160 A.D. Galen recognized a disease affecting the urethral tract and named this disease "gonorrhea," which he believed was an involuntary escape of semen. Lacroix has stated that during the Middle Ages, Paris quartered its prostitutes in a quarter known as the clapier section, and it was from this locality that the term "clap" originated. So today we still have the words "clap" and "gonorrhea" which are used interchangeably by many physicians. From these two words there has developed a number of vulgar names which are used by the laity when referring to gonorrhea, such as "the morning drop," "nipper" and "a dose".

Although there are no means of positively identifying gonorrhea in the early ages, it is almost certain that the disease can be traced back to the earliest records of human life.

In 1530 Fracastor, an Italian physician, published a poem entitled, "Syphilis sive Morbus Gallicus." In this poem he describes the pagan gods and assumes that a shepherd, whom he terms Syphilus, had addressed offensive words to Apollo. The god in order to punish him struck him with a disease of the genital organs. The inhabitants of the country afterwards call this the Disease of Syphilus, or Syphilis. Opinions differ as to the source from which Fracastor got the name, but the most probable origin according to Buret is *σύν* with and *φιλός* loving.

The date of origin is much debated, some dating it from 1494 when it was said to have been introduced into Europe from America by the crew who sailed with Christopher Columbus, in his search for a short route to the West Indies. This is disproved by the multitude of names given to it at the time of the great epidemic of the 15th century, for, had the disease been imported from America it probably would have been called "Mal Américain." Others claim that syphilis originated in Europe at the siege of Naples in 1493, but this cannot be proved, as it will be shown that no doubt the disease was present long before this time. The probable truth is that syphilis was universal, but not in the same degree in all countries or at all periods. It was also little understood. Syphilis is probably as old as man. The evidence in proof of this view we shall now proceed to consider.

It is impossible to fix a date as a limit to the prehistoric period, for at one and the same time we find certain nations cultivating science and writing treatises on medicine, while certain others were in a state of barbarity. At Solutre in the department of Saône-et-Loire is a prehistoric spot where human remains have been found, apparently of an Asiatic race. Here a woman's skeleton was discovered with nodes on the tibia, which were pronounced by Virchow and Parrot to be syphilitic. Parrot has found traces of congenital syphilitic bone disease in five skulls of Peruvian infants. This shows that syphilis existed in Peru before the Spanish Conquest. Jourdanet relates the history of syphilis in Mexico before the Conquest, and refers to the opinion of Captain Cook that the disease existed in Oceania.

---

* Read before the Worcester District Medical Society, Nov. 11, 1914.

Syphilis existed among the Chinese five thousand years ago. In 1863 Dabry published a book on syphilis among the Chinese. He translated the manuscript which escaped the holocaust commanded by the Emperor Hoang-ty, who collected all the writings which existed. From these we learn through Dabry that the Chinese treated syphilis by mercurial inunctions, they also recognized scabies and treated it with sulphur. They understood venereal diseases better than they have been known since up to the time of Ricord. They knew the duality of chancres, which was only established in our time by Ricord; and also that syphilis and gonorrhea were distinct diseases. This quotation from Dabry's book is given by Buret, showing somewhat the extent of their knowledge: "It happens sometimes that, several months after the cure of a venereal sore the individual suffers suddenly from headache and fever, pains in the bones, and vertigo; a short time afterwards small copper-red spots appear on the face, which increase gradually. The face becomes bloated, chiefly the nose, the speech becomes difficult and there are pains and itching of the throat. The spots change to small purple nodules as large as peas which discharge a thick and foetid liquid; the body soon becomes covered with spots and nodules of the same nature; mucus flows from the nose and the breath is foul.". There is also mention of condylomata, ulceration of the tonsils, and pigmentary syphilides of the neck. It is also stated that the disease may be transmitted to new-born infants. If we are astonished at this knowledge, we must remember that the Chinese invented gun powder when Europe was using the bow and arrow. Syphilis was apparently known to the Japanese but the records are very scanty.

Thus above, in a somewhat sketchy manner I have tried to show that gonorrhea and syphilis both have existed from the very earliest history of the human race. Passing along to the more enlightened ages we note that as civilization progressed so did the knowledge of gonorrhea and syphilis. After the Roman conquests the city of Rome, with its enormous population, settled down to a life of peace, luxury and vice, such as heretofore had been unknown in the world's history. As this time prostitution was rife. It was a common occurrence to see the nobles and men of power leave their palaces to spend the night in the brothels of the city. Some Romans even went so far as to maintain a brothel in their own palaces. If such form of vice was found among the wealthy there is no doubt but that similar conditions existed among the poor, but in a lower and more sordid scale. Rome provided for public baths which were used by men and women, boys and girls, who bathed in a state of nudity, and often these public baths were nothing more than houses of assignation. The shampooers and those who massaged the bathers were members of the lowest class. Sometimes the interior of a private citizen's house had its walls decorated with lewd pictures and lascivious frescoes. There is little wonder that people at this time lead such lives when we find Nero, who was supposed to be their leader, a habitual frequenter of houses of prostitution and not only that, he dined in public with hordes of prostitutes. With such vice venereal disease must surely have thrived. The lives lead by the Greeks at this time were no better than that of the Romans and as a consequence venereal disease must have been prevalent among them to a large extent.

In the fifteenth chapter of Leviticus Moses warned the children of Israel of the dangers of a disease which was undoubtedly gonorrhea. He must have noted an alarming increase in its spread among his race, for in the Book of Leviticus he laid down definite sanitary and police regulations for its prevention. The historian Josephus relates how the Jews on their way to Canaan contracted venereal diseases, and as a result many of their own race were stricken with them. Thus gonorrhea and syphilis played an important rôle in the etiology of diseases of men and women in these ancient times.

The above must be true for at this time the Israelites were instructed to "put out of camp every leper, and every one that hath an issue." Probably many who were termed lepers were simply advanced cases of syphilis showing terrible tertiary lesions following faulty treatment. As for the interpretation of the word "issue", this is understood by many as referring to gonorrhea. However, some authorities believe that the term does not refer to a venereal disease.

Passing down through history we find that venereal disease was becoming so prevalent that the cause and treatment were given more consideration. In the fourteenth century the infectious nature of gonorrhea and the mode of its contagiousness were pretty definitely recognized. People became alarmed and ordered police regulations for its control, and medical supervision of houses of prostitution was inaugurated. In 1497 James IV issued a celebrated proclamation banishing all the infected from the City of Edinburgh. Henry VI placed police regulation in force, ordering all venereal patients from public hospitals, and required them to be strictly guarded at night. No wonder such stringent rules were taken, for in the fifteenth century all Europe was swept by an epidemic of syphilis, so severe that many lives were lost from this dreaded disease.

Up to this time you will note that very little was done to prevent the spread of gonorrhea or syphilis. When Rome was in her glory and prostitution flourished rife these diseases occupied very little space in medical literature. The Roman physician did not generally care to consider these diseases, believing that they were beneath his dignity. From what can be learned the Roman physicians refused to treat venereal disease, and as a consequence the rich relied upon their slave doctors to care for them when suffering from either gonorrhea or syphilis. As for the poor it is hard to say what became of them.*

At the end of the fifteenth century and the beginning of the sixteenth century venereal disease had become such an important factor in the health of the public at large that the physicians began to study the cause and treatment more closely. Gonorrhea, especially in England, at that time became very prevalent and a large per cent. of prostitutes were infected. Both syphilis and gonorrhea, however, were somewhat confused, the physicians believing the latter disease a symptom of the former, and treated it as they did syphilis, generally with mercury. However, more rational views regarding the etiology of syphilis and gonorrhea were held by certain diagnosticians who carefully studied these diseases, and in 1554, P. Haschard wrote warnings against treating gonorrhea with mercury, stating that he believed the diseases were distinct and separate.

In 1750 the profession began to recognize that ophthalmia in the infant was associated with leucorrhea in the mother. From this it was shown that a mother suffering from gonorrhea at the time of giving birth to her child would transmit the infection from the vaginal tract to the infant's eyes. Discussions and differences of opinion as to the separate identity of these two diseases continued until the eighteenth century when it was generally recognized by all physicians that gonorrhea and syphilis were two different diseases. A little later, in 1767, this general agreement was again torn asunder, for Sir John Hunter offered himself as a sacrifice for the cause under dispute. He made two punctures in his penis with pus taken from a supposed case of gonorrhea. As a result he developed syphilis, having the secondary lesions such as mucous patches on the tonsils, together with a general glandular enlargement. As a result of Hunter's experiment came the conclusion that syphilis developed from gonorrhea. The medical profession here again changed their minds and went back to the old theory that gonorrhea and syphilis were the same disease, one developing from the other. This we would naturally expect, for Hunter was at this time one of the leading physicians and surgeons in Europe and his upright opinion carried great weight. It has been mentioned that probably the pus with which Hunter inoculated himself was taken from a patient suffering from a urethral chancre which was mistaken at that time for gonorrhea. Many investigators, however, did not stop with this report but continued the question by means of original research. Hale and Bell, from their work, taught that gonorrhea and syphilis were different diseases. Bell showed by inoculating the urethra in two physicians that while they developed gonorrhea they did not contract syphilis. This experiment stimulated other investigators and in 1811 Herandez inoculated seventeen convicts with gonorrheal pus, and all developed gonorrhea, not one contracting syphilis.

This experiment carried great weight with the profession in genereal but a new dispute now arose. Caron, Devergie and Desruelles taught that gonorrhea was not caused by any specific virus and the German believed that it was a general infection. Thus opinion was left in a much unsettled state. In 1837 Phillippe Ricord, a physician with a large experience, made 667 inoculations of gonorrheal pus in the urethras of different individuals and in not a single case did syphilis develop. These experiments of Ricord's and the brilliant manner in which he presented his findings definitely established the separate identity of gonorrhea and syphilis.

About this time there came on the scene another generation of men such as Koch, Pasteur and others who began to extend their scientific study to the laboratory in the hope of finding the cause of these diseases and ending this lengthy discussion. After much laboratory work by many investigators, Albert Neisser on July 12, 1879, described a micrococcus that he stated was the cause of gonorrhea. His conclusions were drawn from the study of thirty-five cases. The micrococcus was also demonstrated in seven cases of purulent ophthalmia. He later demonstrated these micrococci by employing Koch's method, thereby establishing without a doubt that gonorrhea was a separate disease and was caused by the gonococcus.

Later with advanced laboratory methods established by the Germans many investigators gave us our clear knowledge of gonorrhea and the pathological conditions produced by this disease. With the question of gonorrhea clearly settled in their minds the profession now determined to find the cause of syphilis, and in 1905 Schaudinn and Hoffmann discovered the spirocheta pallida, an organism found in secretions from syphilitic sores, that is now recognized as the cause of this dreaded disease.

Now that we have definitely settled the cause of both gonorrhea and syphilis let us consider the prevalence of these diseases. Neisser states that with the exception of measles, gonorrhea is the most wide-spread of all diseases. It is the greatest producer of involuntary "race suicide" and by sterilization and abortion does more to depopulate the country than does any other disease.

It is estimated that at the present time we have 500,000 prostitutes in this country and that 40,000 die annually. As nearly as can be estimated 30% of these deaths are caused by gonorrhea. In pelvic infection in women we find the cause is generally due to gonorrhea and different investigators claim that a majority of abdominal operations on women are performed for conditions which originate from this dreaded disease. I will quote some of the figures given by different investigators claiming the percentage of pelvic infection caused by gonorrhea. Price claims 90%; Morris, whose figures were taken from dispensary patients, states 80%; Pozzi and Frederic 75%. Morrow and Bridgman have reported that in the State Training School for Girls at Geneva, Illinois, approximately 55% of the inmates have gonorrhea at the time of their entrance. Dröse, Saenger and Eberhard have shown that on examination of 1361 gynecologic patients 12.7% were infected with gonorrhea.

---

* The rich were treated by their slave doctors, while the poor were attended by the archiatri, who occupied about the same position as our district or city physician.

In carefully considering these figures we can safely say that gonorrhea causes 50% of all pelvic inflammatory diseases in women. Gonorrhea is the king of sterility and Neisser, Bumm and Fürbringer state that 30 to 50% of all childless marriages are directly caused by this disease. In France, it is claimed that out of 10,000,000 families, 2,000,000 are without issue. With these figures Neisser believes that in nearly 1,000,000 of these sterile marriages in France, gonorrhea is the etiologic factor.

In the United States census of 1900 for the blind and deaf, ophthalmia neonatorum was the cause of blindness in 25.02%. It is claimed that 10% of all blindness in the world may be blamed to gonorrhea.

In 1901 a committee was appointed to consider the prevention of venereal diseases in New York City, and circulars were sent to 4750 physicians inquiring as to venereal diseases. From the replies[1] received it was estimated that there were 200,000 active venereal cases walking in the streets of New York daily.

The Committee on Prophylaxis of Venereal Diseases of the Washington State Medical Association informs us that 80% of all men in large cities have had gonorrhea once or several times, 45% infect their wives, and 80% of all operations upon women for diseases of the uterus and adenexa are caused by this disease. With this report it is stated that 20% of blindness results from gonorrhea. Bierhoff estimates that in New York today there are at least 1,000,000 persons affected with venereal disease, and of this number 800,000 are suffering from gonorrhea. Morrow believed that there are 250,000 married women suffering from gonorrhea and that 1,500,000 men contract gonorrhea annually.

Hepburn reports that in Baltimore during 1906, 3090 cases of venereal diseases were treated by physicians in private practice and 6390 cases in dispensaries. During the same year in Baltimore there were treated 575 cases of measles, 1172 cases of diphtheria, 577 cases of scarlet fever, 175 cases of chicken-pox, 58 cases of small-pox, and 733 cases of tuberculosis, making a total of 3310 cases of infectious diseases against a total of 9450 cases of venereal disease.

Swarts, in the report of the New York State Sanitary Officers, in 1910, states that 70% of all women who come to New York hospitals for treatment of venereal diseases are reputable married women who have been innocently infected by their husbands. He also reports 12,500 cases of measles, 11,500 cases of diphtheria, 19,000 cases of tuberculosis, making in round numbers 41,000 cases of infectious diseases. During this same period there were 243,000 cases of venereal diseases. In Germany, Litchfield estimates that in Berlin there are infected annually from four to five per cent. of the soldiers, 13 to 30% of waitresses, 16% of salesmen, and 52% of students. In a report of April, 1910, it was estimated that 100,000 persons were treated daily in Germany for venereal diseases.

These last figures I wish to mention to show that venereal disease is prevalent to a large extent all over the world and that the United States is not the only home of these dreaded diseases.

Generally most statistics taken from civil life are more or less inaccurate. In the army and navy conditions exist whereby frequent medical examinations are held. In this way statistics as to the prevalence of venereal diseases can be relied on with more certainty. It has been generally thought that in the army and navy venereal diseases are more frequent than in civil life. Von Toply states the relative venereal morbidity in armies bears a close relationship to the prevalence of this class of disease among civilians in the district in which the soldiers are quartered.

Munson gives the following figures relative to the prevalence of venereal disease per 1,000 in armies:—

Germany	29.9
Russia	36.0
Japan	40.0
Holland	48.0
France	49.0
Austria-Hungary	60.0
Great Britain (Home)	173.8
" " (Foreign)	522.3
United States	73.0

With this large per cent. of infection in the United States army it is easy to see how venereal diseases hold first place for admissions to hospitals and cause more discharges and render more men non-efficient than any other single factor. About the same can be said of the United States Navy. For a five years' period, from 1904 to 1909, according to Report of Surgeon General U. S. N., with an average of 43,165 men in the navy and marine corps, there were admitted to the hospitals for treatment for venereal diseases 32,852 patients, 11,526 were suffering from gonorrhea and 4890 from syphilis. The remainder were treated for other forms of genito-urinary diseases.

---

[1] Report of the Committee of Seven, Med. News, Dec. 21, 1909.

With this vast amount of venereal disease present there can be no question as to the existence of prostitution throughout the United States. It has been estimated that New York today has at least 75,000 prostitutes and other cities have the same number in proportion to their population. With such conditions present venereal disease costs the country a great deal of money. Kelley in *Jour. Amer. Med. Asso.*, October 6, 1912, estimated that America spent three billion dollars a year as a result of these diseases. The Chicago Vice Commission has estimated that profits obtained from prostitution in that city amount to at least $15,000,000 annually.

Now that we are aware that the prevalence of venereal disease is so great the question of controlling such infection should receive the attention of every physician and student of sociology. The question of prevention of venereal disease is a subject that most medical men have not cared to discuss. Some are willing to reap whatever financial gain they may obtain for the treatment of these cases without the least care of how the public is protected from infection from this class of patients. This is more true of the English speaking nations, for statistics show how prevalent the disease is at the present time and how little is being done to check its wide spread menace to public and private health. Our boards of health still ignore venereal diseases, allowing syphilitics to wander about at large in the acute infectious stage of the disease, thus placing themselves in a position where they can infect the innocent.

A case which came under my care at the genito-urinary clinic at the Worcester City Hospital I may cite as an example.

A girl, twenty years of age, purchased a harmonica in a five and ten-cent store. The instrument lay on a counter and was exposed so that whoever wished was at liberty to pick it up and play on it. On returning to her home she practised on the instrument. On the second day she noticed that her lower lip was sore where there was an abrasion from a rough surface on the harmonica. The abrasion did not disappear under ordinary treatment, and at the end of two weeks it had become a sore of considerable size. She consulted a physician and was informed that she was suffering from "cold sore" and was advised to have it cauterized. Following cauterization the sore became enlarged to such an extent and associated with such marked glandular enlargement below the angles of both jaws that she consulted another physician who prescribed an ointment and gave her some medicine to take internally. During the sixth week from the time of the appearance of the sore on the lower lip patient noticed an eruption on her chest and abdomen. Not knowing the cause of this eruption she came to the hospital for a diagnosis and was referred to my clinic. On examination she presented a hard indurated sore on the lower lip which had partly healed leaving a hard area the size of one-quarter of a walnut. There was a general glandular enlargement, more marked under the angle of the jaw on the same side as the sore. On the back, arms, abdomen and thighs was a diffused roseolate macular eruption. This associated with other signs and symptoms plus a positive Wassermann test proved the case to be syphilis.

In this case we have a girl of twenty suffering from a disease that she knew nothing of. Her infection was contracted in an innocent way. The most probable manner was that some person wandering about in the early infectious stage of syphilis had picked up the instrument and attempted to play it. His mouth contained mucous patches which were applied to the playing surface of the instrument infecting it with the spirocheta pallida which in turn was the cause of the chancre on the lip of the innocent patient. Up to the time of consulting me the patient knew nothing as to the highly infectious state she was in. She did not realize the possibility of infecting other members of the family, and in consequence no forms of prophylaxis were carried out.

In this case, if we had medical supervision established legally for the prevention of venereal diseases this patient would not have met with this infection. Here we see the lax condition of our boards of health, not due to their fault, but simply because there is no law to compel them to single out venereal disease and try to reduce its prevalence. To prevent such forms of infection I believe that there should be established a board in each city entirely separate from the local board of health but associated with either a national or state board, and that its work should be for the prevention of venereal diseases. When cases are discovered they should be reported to this board and if it is found that the patients' circumstances are such that they are unable to receive private attention, then a clinic should be provided for their care. The patients should be required to report regularly for treatment and for instructions, and on failing to do so should be reported immediately to this board which will in turn look them up and legally inform them that they are to abide by the instructions.

On the other hand, if the patient can afford private attention then his physician is held responsible for the control of his case, until he is in such condition as not to infect others. This class of patients should also be reported to the board as soon as a positive diagnosis of syphilis is made, and if they refuse to follow the physician's advice they should be reported and treated in a manner similar to the dispensary case.

There is no doubt that under the present conditions venereal diseases are alarmingly on the increase, and the question arises what methods shall be used to prevent their spread. First we must consider the source of infection and then apply suitable forms of prophylaxis. In the United States at the present time there are in round numbers at least 500,000 prostitutes, and of this number over 50% are infected with some form of venereal disease. On the other hand there is a large number of males suffering from chronic infections who remain uncured either from ignorance or the lack of funds to receive proper treatment.

The fact that I believe that women are for many reasons the most prolific source of infection would lead me first to consider, how shall prostitution be controlled so as to reduce venereal infection to a smaller percentage. We realize that it is a sheer absurdity to believe that prostitution can ever be completely eradicated. It has existed from the very beginning of the human race and will surely continue. To try to directly control sexual indulgence would be useless and the time would be wasted, for the appetite forms one of the strongest, if not the strongest instincts of the human race. We must consider that if it were not for this passion the world would soon be depopulated. Probably no greater cause exists today in the producing of prostitution than the high cost of living. The increased cost of living postpones marriage and leaves in every city a large number of healthy individuals of both sexes whose normal sexual desires have no legitimate means of gratification. We must sorrowfully confess that the home environment of many girls is not the best, and if such is the case we must consider her welfare when away from home. Surely prostitution does not begin at home, nor does it begin suddenly. It is a gradual development and is contracted from our "social evils." The greatest evils in my mind are the cheap dance halls and places of entertainment associated with the paying of a "low living wage." If these economic and social factors were better regulated I believe that prostitution would not be so great.

Realizing that it is impossible absolutely to abolish prostitution, then we must consider what methods are the best to prevent the spread of venereal diseases by this source.

First, let us consider what other nations are doing. Germany has organized a department which consists of special police and medical men. The police department looks after the supervision of the prostitutes, seeing that they do not solicit in the streets. If they do, they are warned, and should they be caught a second time they are brought to the police station where they are given a talk and provided with a booklet containing information concerning places where medical treatment is given and describing the dangers of illicit intercourse, venereal disease, and the manner in which it is spread. If the girl is under age notice is sent to her parents. If, despite these warnings, she persists in her course of living she is examined, and if found to be diseased she is sent to a hospital where she is detained, and treated until the period of her infectiousness is over. If she is found to be free from infection she is inscribed on the records and given a book that is countersigned at each medical examination. No girl under eighteen years is inscribed, but should she be infected she is sent to a hospital for treatment. The police in performing their duties wear plain clothes and if an arrest is made a closed cab is employed. The police records are available only to members of this board. The department occupies separate buildings having private entrances, exits, and waiting rooms for the women. The women are well treated and the entire procedure is carried out with as little publicity as possible.

Berlin, which is a city of 2,500,000 population, is divided into twelve districts, each of which has a physician in charge. The first examination is made by female physicians. No woman who shows that she is earning money elsewhere can be inscribed, and if at any time she should care to reform, her name is then removed from the inscribed list. This is about the general method employed in Germany; however the methods vary somewhat in different cities. In Dresden a rule is made whereby scrapings from the cervix and urethra are stained and cultures grown. The prostitutes are divided into three classes. Class I consists of women under the age of 24 years, and of all women who have not been under control for one year. Class II of women between 24 and 34 years of age. These are examined once a week. Class III, women over 35 years of age, are examined every two weeks. All women are given advice as to hygienic regulations and are advised against associating with minors. They are asked to dress decently and conduct themselves in a proper manner when in public. They cannot visit parks and are not allowed to show themselves at the windows of their dwellings. These are some of the rules and regulations that the prostitutes are compelled to carry out. As a result of this method of controlling prostitutes it is claimed that venereal infection has been considerably reduced. DeForest reported that in Dresden infection had been reduced 40% among the women. Biernoff states that in 1911, 3024 sources of infection were removed by the above method. Infection is somewhat uncommon in the registered prostitutes and good order is maintained throughout the larger cities of Germany.

In Norway venereal diseases are reported and patients are treated at the public expense. Treatment is compulsory and physicians are obliged to inform the patient as to the infectious character of the disease. Should the patient infect another then he or she is liable for the expense or treatment and damage suffered by the one infected. Physicians are in charge of the sanitary offices and report good work.

In France prostitutes are under police and medical control. If a woman in the street is suspected of prostitution she is arrested by special police detached for this work. If it is proven that she is a prostitute she is inscribed and given a card which is countersigned at each examination. Inmates of houses are examined weekly and others are obliged to report for examination every two weeks. At any time they are found to be diseased they are sent to a special hospital where they are detained until they are free from danger of infecting others. Paris has over 100,000 prostitutes and it has been estimated by Fournier that only 7.08% of infection appearing in men is contracted from public prostitutes.

In England attempts at police regulation have been tried and the results have been a failure so that this system is now abandoned.

In Italy, free beds are provided for venereal patients who are treated until all danger of infecting others is passed. Japan, Austro-Hungary and Havana also carry out a similar system.

In the United States the method of dealing with prostitution varies in different localities, this being due to different laws in each state. The general feeling has been strongly against any form of official recognition. However, some cities have made an attempt to regulate prostitution. Detroit at one time contained 125 houses of ill fame and registered about 500 prostitutes. This soon became unpopular and at the end of one year was abandoned.

In New York in the year 1910 the Page Bill was passed which provided for medical examination of all females convicted of soliciting. The examination was made by a female physician, and if a person of this class was found to be affected she was sent to a public hospital having a ward for the treatment of the disease from which she was suffering. After being cured so as not to infect others she was discharged and released from custody upon the written order of the officer in charge of the institution to which she was committed. If the prisoner was cured prior to the expiration of her sentence she was then transferred to a workhouse and discharged at the end of her time. On discharge no certificate of any kind was given to the woman. From reports of the Board of Police Magistrates the law was effecting some good. After having been in effect for about one year the Page Law was declared unconstitutional, and all examinations were suspended.

In Salt Lake City prostitution is ignored but officials give a license under the name of a bond. Every month the prostitutes are arrested and then bonded for $10.00 or $15.00 a head to appear and answer to the charge of vagrancy. They never appear and the bond is forfeited, the money going to the city treasury. This acts as a license to the prostitute. This or similar methods have been carried out in the different cities throughout the United States.

I understand that in Portsmouth, N. H., the city officials recognize that with the large number of soldiers stationed in that city vice and venereal disease are bound to spread. They have given permission to houses in certain locations for the keeping of prostitutes which are said to number about one hundred. The women are restricted and are not allowed in public but only when on business and then they must go unescorted. They are examined once a week by a physician who reports their condition to the chief of police. When a new arrival comes to the city she reports to the police, who take her record and give instructions as to her mode of living. Should she at any time fail to obey these instructions she is ordered from the city or arrested. At certain times a moral wave sweeps the city and the police officials order all houses of ill fame closed until this condition subsides, when they again give their consent and protection.

In the early part of my paper I have mentioned that probably 50% or more of the prostitutes in the United States are infected with some form of venereal disease. From cases that come to me for treatment I would judge 80 to 90% receive their infection from public prostitutes. There is no wonder that this condition exists when we consider that at the present time we have no methods of controlling these classes of patients who wander about in a highly infectious state.

Our methods of controlling prostitution in the United States at the present time do nothing but open up illegal avenues for "graft," whereby certain officials add to their salaries at the city's expense and to the detriment of the public health.

Would it not be better to regulate prostitution if by so doing we could eliminate houses of ill repute that thrive along our country roads, rid the police systems of many grafts, wipe out the white slave traffic and the harboring of inmates, drive away the clandestine prostitutes and dive keeper, and lastly, an important point, stop the sale of liquor in brothels which in many cases is the cause of prostitution?

The results obtained by the Germans, I believe, show that by controlling prostitution they have been able to check the spread of venereal disease.

In Paris, a city of 100,000 prostitutes, Fournier shows that only 7.08% of the infected cases are contracted from public prostitutes. If prostitutes are under control I believe that it gives us a starting point whereby we will be able to reduce the number of these people to a smaller percentage. It will bring the prostitute before us in her early career, and the chances of reforming her are greater than in later life. The regulation of prostitution if properly enforced controls only the females, the male being free to spread the disease, therefore it is proper to consider the control of infection through this means. There is no doubt that a large proportion of patients suffering from venereal diseases are unable to seek the services of a private physician, and, as a consequence, are obliged to roam about in an infectious state. Throughout our cities the dispensaries and hospitals provide in a very scanty way for the care of such patients. This is more true in smaller cities where no medical schools are established. In larger cities, however, where medical schools are found, there are one or more dispensaries associated with a general hospital where attention is given to patients suffering from venereal diseases. These are not established for the protection of the public but for the benefit of the medical student.

Cities with a population up to 100,000 inhabitants pay little attention to the treatment of venereal diseases. Should we compare the amount of infection present in cities of this size with large ones, where medical colleges are found, I believe that the percentage is as high in proportion to the population as it is in larger cities. I believe that every city or town of sufficent size that is provided with a hospital should see that there is a well-equipped department established for the care of venereal cases. This department should care for patients that are unable to pay for private attention elsewhere. The hospital should be equipped with a venereal ward and laboratory facilities for diagnosis and blood tests in order to determine the condition of patients. In conjunction with the ward it would be wise to have a special operating room for the giving of salvarsan and caring for such patients when surgical operating is advised. By doing so, patients in a highly infectious state will not come in contact with the surgical cases in the hospital. The city should furnish salvarsan free for the treatment of all cases that apply at the hospital and are unable to pay for the drug. Why not? A syphilitic patient who is in an infectious state is a danger to the community at large. He or she may be the means of infecting the innocent through drinking cups or many other means where the public is exposed.

We give out serum for the treatment of diphtheria and meningitis because we believe that persons infected with these diseases are dangerous to the public at large. We even go so far as to deprive them of their liberty by quarantine until they are not dangerous to the public. These diseases are curable and produce no after effects in the following generations. Yet for such a disease as syphilis that ruins homes, produces destruction and fills insane hospitals, we do not provide prophylaxis or care, still knowing that today it marks one of the greatest, if not the greatest danger to the race. If such is the condition why should not salvarsan be furnished by the state or city to be used in cases that are dangerous to the public? Is there any reason why we should not have the power of depriving of their liberty the highly infected cases that do not submit to proper treatment by placing them in quarantine until all danger to the public is past? My answer to this question would be that we should have the power just as we have in quarantining diphtheria, scarlet fever, and other infectious diseases. This can easily be accomplished if a venereal ward is established in our cities, and if a law is passed whereby physcians are obliged to report all cases of syphilis. In this way, cases that cannot provide for private attention outside will be cared for in one venereal ward. These patients are to be quarantined until all danger of infecting others has passed. To do this will require very little time. Under proper treatment syphilitic patients who are highly infectious can be placed under control inside of two weeks.

Having the patient placed under control and where he is not dangerous to the public, we must provide some means of completing the cure. This can be carried out in our dispensaries which are associated with our hospitals. At the present time most hospitals are well-equipped to care for ambulatory cases, and the only thing required of the patient is to carry out the instructions that are given him. Venereal diseases when properly treated very seldom keep the patient from his work. To seek treatment at dispensary hours will eventually cost the patient his position. For this reason many cases remain away from treatment. These are the cases we wish to reach if we hope to produce a cure and protect the future generation. For this reason I believe that dispensaries in large cities should arrange their hours so that the working class can apply for treatment during the noon hour which is allowed them for lunch. Of course, where there is a large clinic one will not be able to treat all cases during the noon hour, and in such a condition, I believe that the establishment of an evening clinic is the proper solution.

By carrying out these methods patients will be encouraged and shown that everything is being done to cure them of their infection, and as a result we will be able to reach the chronic infected cases that are a danger to the community at large. By such curative and preventative efforts we not only will be safeguarding the community from the infective patient, but in the case of syphilis we will be insuring the individual's future against the distressing tertiary stages and the incapacitating parasyphilitic forms, at the same time conserving the progeny. The gonorrheic will be saved many distressing complications and much surgery. Sterility and blindness will be diminished, giving back to the community in vital force a value infinitely in excess of the cost.

DIFFERENTIAL DIAGNOSIS AND INDICATIONS FOR TREATMENT OF TUMORS OF THE NECK.

BY OLIVER C. SMITH, M.D., HARTFORD, CONN.

Surgeon to Hartford Hospital.

RICHLY supplied with lymphatic and secretory glands, and exceedingly vascular, no region of the human body is more subject to inflammatory involvements and growths than the neck, unless it is the abdomen. The pathology of these lesions has a wide range, and their diagnosis is at times difficult or impossible without the aid of sections and the microscope. Their correct diagnosis is extremely important, in order that appropriate treatment may be applied without loss of time, and that a correct prognosis may be made. In this discussion the word tumor is used in its broad sense as including all swellings, acute and chronic, as well as true neoplasms. The lesions of this area may be classified as follows:—

TUMORS OF THE NECK.

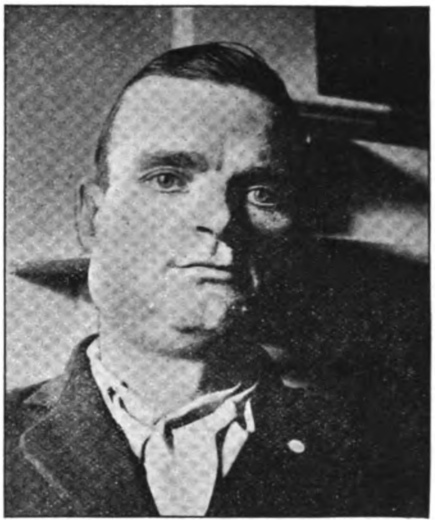
A. Inflammatory.
  a. Acute:
    1. Parotitis (mumps).
    2. Submaxillary adenitis.
    3. Cervical lymph adenitis.
    4. Furunculosis and carbuncle.
    5. Anthrax (malignant pustule).
    6. Actinomycosis.
    7. Echinococcus cyst.
  b. Chronic:
    8. Chronic lymph adenitis.
    9. Tuberculosis.
    10. Syphilis.
    11. Hodgkin's disease.
    12. Mikulicz's disease.
B. Embryologic Malformations.
    13. Branchial cysts.
    14. Tumor of thyroglossal duct.
C. Neoplastic.
  a. Benign:
    15. Lipoma.
    16. Fibroma.
    17. Chrondroma.
    18. Osteoma.
    19. Sebaceous cyst (wen).
    20. Angioma.
      a. Hemangioma.
      b. Lymphangioma or hydrocele.
    21. Hygroma.
    22. Teratoma.
      a. Dermoid cysts.
      b. Mixed tumors of salivary glands.
  b. Malignant:
    23. Carcinoma and epithelioma.
    24. Sarcoma.
    25. Lymphosarcoma.
D. Tumors of Special Organs.
  a. Thyroid.
    26. Physiologic hypertrophy of menstruation and pregnancy.
    27. Colloid adenoma (goitre) with or without cysts.
    28. Parenchymatous hyperplasia.
    29. Foetal adenoma.
    30. Malignant disease.
      a. Carcinoma.
      b. Sarcoma.
  b. Carotid body (31).
  c. Aneurysm of aorta and carotids (32).
  d. Tumors of larynx (33).

INFLAMMATORY LESIONS.

Acute. Under this heading we have acute parotitis, and acute lymphadenitis of the submaxillary, cervical, sublingual and submental glands. Acute infections of these glands are due to pathogenic organisms, with the exception of a specific infection of the parotid gland, causing mumps and the occlusion swellings of the parotid or salivary ducts, which are caused by pressure or calculi with secondary infections developing.

Parotitis. The specific or infectious involvement of parotitis or mumps is accompanied by constitutional symptoms with sometimes a high range of temperature; the gland is swollen, tender and painful. Complications are unusual in a child, but in the adult male orchitis is a frequent accompaniment, and in a female congestion of the breasts, ovaries and labia is not uncommon.

The most frequent mistake in diagnosis is the confusion of mumps with cervical lymphadenitis; the latter occurs back of the jaw and below the ear, while in mumps the swelling extends forward upon the face and posterior to the sterno-mastoid muscle, the lobe of the ear being the center of the swelling. The parotids contain lymphatic glands in their substance. Infections may be carried into the parotid through these channels or by the blood stream. This form of parotitis is more frequently the result of metastasis or general infection than from a direct source. It occurs in typhoid and scarlet fever, the other infectious diseases and in suppurative lesions, both before and after operation. This form of parotitis should not be diagnosed as specific parotitis or mumps, as the condition requires early incision and drainage for relief of tension.



Acute lymphadenitis.

Submaxillary and Cervical Lymphadenitis. Acute infection and swelling of the submaxillary and cervical glands is not usually suppurative, and in an individual with good resistance the swelling frequently subsides under antiphlogistic treatment and with appropriate treatment of the throat, nose, teeth and mouth. The original focus should be carefully searched for and treated.

Acute suppurative lesions in the neck are most frequently found in the submaxillary region; the space above the carotid packet is the next most frequently involved. The intracapsular abscess of the salivary glands may become rapidly serious, due to tension under which the infection is held. Evidences of marked constitutional infection rapidly develop, extensive swelling occurs, causing respiratory disturbance, and occasionally death may result before active suppuration exists. This condition is known as Ludwig's angina. The acuteness of the onset and the marked local condition and constitutional symptoms leave little room for error in diagnosis of these cases. The treatment: early and thorough drainage by careful dissecting is advised, as the pus frequently lies in the region of the great vessels, and even the ordinarily safe method of Hilton may not be suitable in this deep area of the neck.

Furunculosis and Carbuncle. The neck is particularly liable to staphylococcic furuncles and carbuncles, the posterior area of the neck being the most frequently affected. The former frequently appear in series, and their diagnosis can hardly be mistaken. Incision, drainage, hot applications and the employment of autogenous vaccines are indicated in the former, and complete excision of the latter, the carbuncle, is the most desirable method of treatment where it can be carried out. The frequent association of glycosuria with carbuncle must be remembered and appropriate internal treatment employed.

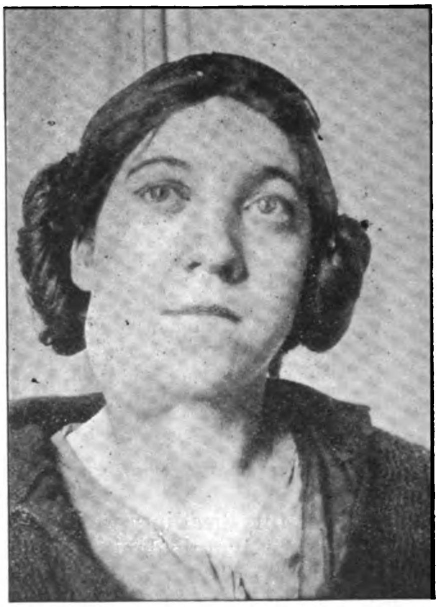
Anthrax. Anthrax or malignant pustule is a rare infection on this continent; it may occur upon the neck, but is most frequently found upon the face and hands. An elevated pustule of varying dimensions with a depressed central scab is the early characteristic appearance. Removing this incrustation liberates a brownish, bloody fluid. The surrounding tissues become highly involved, and later purplish and gangrenous in appearance, although there may be no indication of suppuration. The occupation of the patient is important, diagnostically, as anthrax is known among other derivations as woolsorters' disease. The finding of the anthrax bacillus is the laboratory diagnostic method of the greatest importance.

Actinomycosis. This specific and infectious lesion, essentially a disease of the lower animals, and known as lumpy jaw in cattle, was first discovered in man by Israel[1] in 1878, the infecting agent being the ray fungus. The region of the face and neck are most frequently involved; it is an accident of young life, occurring more frequently in males. The disease is believed to be increasing in this country.

The portal of entrance to the region which interests us is usually an abrasion or ulceration about the tongue, teeth or cheeks. A hard, nodular, circumscribed swelling slowly appears in the subclavicular region or at the angle of the jaw. The skin becomes purplish and tends to break down. Secondary infection usually intervenes. The lesion progresses so slowly that the diagnosis may easily be confused with sarcoma or carcinoma, tuberculosis or syphilis. Characteristic granules are visible to the naked eye in the pus of actinomycotic lesions, and the ray fungus may be demonstrated under the microscope. Its correct diagnosis is highly important, as vigorous and persistent treatment is essential. Liberation and destruction of the invading fungi by incision, curettage, silver nitrate applications locally, iodide of potassium internally, and the best of hygiene are the accepted methods of treatment.

Echinococcus Cysts. Echinococcus cysts fortunately rarely occur in the neck; they spring from the deep recesses and gradually bulge outward at the side of the neck, either anteriorly or posteriorly, to the sterno-mastoid muscle. As in many cystic tumors the aspirating needle is the surest method of diagnosis. The clear contents, containing the characteristic hooklets, is pathognomonic, and excision is the only treatment.

Chronic Lymph Adenitis. The continuation of an acute infection by the less virulent organisms of the salivary and cervical lymphatic glands may lead to chronic hyperplastic changes which slowly subside after the focus of infection is cured. A chronic indolent infection of the lymphatics and cellular tissues of the neck, causing dense induration, suppurating slowly and irregularly, first described by Reclus[2] in 1894, is known as Ligneous Phlegmon. No one specific organism is believed to cause this condition, all manner of organisms being found. The disease must be differentiated from syphilis, tuberculous adenitis and malignancy. The ordinary measures used for hastening suppuration are ineffectual. Small multiple abscesses or eventually a large abscess may develop, requiring incision and drainage.



Tuberculous cervical adenitis.

Tuberculosis. Tuberculosis is by far the most common cause of chronic glandular enlargment of the neck. The tubercular organisms in cases of primary infection usually gain entrance by the tonsil, pharynx, nares, gums and teeth. The extension is through the lymph channels, the lymphatic glands harboring the bacilli, hyperplasia resulting, followed by softening and glandular destruction and caseation. These swellings vary in size from small nodules to extensive, deforming masses. Exacerbations and remissions are common. During the period of remission the patient and family are led to hope that the condition is recovering; later fresh invasion through one of the paths above indicated results in increase in the size of the growths, with involvement of additional glands. Most of the older writers discuss this condition as scrofula; it was considered to be the local expression of a general glandular disease. A more minute study of the lymphatic system by Poirier,[3] Cuneo and others has taught us that the cervical lymphatic glands do not drain the thorax and the mediastinum, and we may conclude that cervical tuberculous adenitis remains a local condition until a hematogenous infection occurs.

The diagnosis of this condition is exceedingly important, as is the institution of prompt and thorough treatment. It is possible to confuse tuberculous adenitis with the more acute infections, also with Hodgkin's Disease, lympho-sarcoma, lymphatic leukemia, syphilis and malignant neoplasms. Their chronicity and their association with evident lesions of the throat, nares or buccal cavity, the recessions and exacerbations, the absence of enlarged glands in other parts of the body, the fact of their occurring in children and young life, the absence of other general infections, such as syphilis, which can be determined by laboratory methods, all point to a diagnosis of tuberculous adenitis. It is, however, at times necessary to secure a section or to make an incision through the capsule of one of the glands to determine its true character.

The fact that there is at present a considerable diversity of opinion as to the proper treatment of cervical tuberculous adenitis, and that its occurrence is so exceedingly common, makes this one of the most important divisions of our subject. Groups of cases call for different lines of treatment: first, those with gross lesions as tonsillitis and adenitis with comparatively early invasion of the cervical glands. Our effort in these cases should be to clear the throat and nares of the disease-predisposing tissue. The tonsils and adenoids, the teeth and gums should also claim careful attention. Following these procedures the child or the young individual should be placed upon an anti-tuberculous régime with all that that implies. The application of iodine and other counter-irritants to the skin seems to be of little value. Many of the earlier cases in individuals of good resistance will recover with nothing further.

The second group includes cases where the local process has extended to decided enlargement and softening of the involved glands: it is this group that the surgeon sees most commonly. The treatment indicated in the first group applies in these cases, and in addition, an incision for the removal of the involved mass, if feasible, cleaning out pus and caseous material, and an application to the invaded tissue of iodine, followed by alcohol, or very hot water. There should be slight provision for drainage at the inferior angle of the incision. In addition subsequent treatment by tuberculin or x-ray is of great value in many cases.

The third group presents a wide extension of the involved glands which have not gone on to suppuration. In these cases, if early improvement does not follow, the treatment applied to group one, with the possible addition of tuberculin or x-rays, and radical dissection of all the involved groups, should be employed. While the operation is extensive, in experienced and careful hands it is fairly safe, because there is an open dissection with all of the structures to be removed and to be avoided visible to the operator.

In the writer's experience there have occurred 78 operations for tuberculous cervical adenitis; there have been no fatalities nor any injuries of important structures. Up to 1910 at the Mayo clinic 649 patients were subjected to complete excision, and there were no immediate fatalities. Pulmonary tuberculosis, if not too extensive, is not a positive contra-indication. With selected methods of anesthesia, and the avoidance of ether, the pulmonary lesion should not be aggravated. The chief objection that the surgeon finds to operations upon these glands is the anticipated scar. This should be avoided as far as possible by making incisions in the normal creases of the neck, by careful suturing of the muscles and subcutaneous tissue, by the avoidance of coarse skin sutures, attention to accurate approximation, and the scrupulous avoidance of infection. It must be remembered that the scar of an incision may be much less extensive and unsightly than the wide and contracted scars of multiple sinuses. Tuberculous adenitis calls for careful judgment and good management. It is a mistake to recommend radical dissection in every case, and it is likewise a mistake to treat in an incomplete manner cases which tend to progress and resist all milder methods.

Syphilis. Chancre upon the lips and tongue is of common occurrence. The cervical glands become rapidly involved, or the chancre may have healed and the patient come complaining only of the glandular enlargement. The history of the chancre may be obscure and the diagnosis in doubt, or the chancre may be still in existence and may be confused with epithelioma. If the sore is in evidence it will have an indurated, reddish base and an ulcerated apex, which on pressure may bleed, but yields no whitish plugs as does the epithelioma. Examination of the scrapings of the ulcer on a dark field stage, in addition to the Wassermann test, should precede operations upon the lip and tongue where there is a possibility of the disease being syphilis. The cervical glands in syphilis are not operable, but yield to general treatment, while in epithelioma they should always be thoroughly removed.

Hodgkin's Disease. Hodgkin's disease, known also as pseudo-leukemia and malignant lymphoma, is a serious constitutional disease with the early local manifestation of enlargement of the cervical glands. The glandular enlargement, unilateral at first, later becomes bilateral; other glands subsequently become involved, such as the supra-clavicular and axillary chains. Early writers considered this condition tubercular, but recent text-books state that all attempts to establish a bacterial organism as an etiologic factor in the disease have been unsuccessful. In 1910, however, Frankel[4] and Much, three years later Negri[5] and Miermet abroad, Bunting[6] and Yates, and Billings[7] and Rosenow in this country, published observations which make it seem probable that a bacterial infection may be accountable for this strange disease. Bunting and Yates have reproduced this disease by inoculating monkeys with a culture obtained from the diseased glands. Billings and Rosenow have published a number of clinical cases; quite a few have improved, and one is apparently cured. The cervical glands enlarge rather rapidly, the submaxillaries being first involved; they are soft, painless, and generally precede any constitutional disturbance. Later there follows general bodily deterioration with cardiac weakness, edema, albuminuria and fatal termination in three to five years.

Hodgkin's disease must be differentiated from the more definite neoplasms; namely, sarcoma, carcinoma, and lympho-sarcoma; also from lymphatic leukemia and tuberculosis. Sarcoma of the lymph glands springs from the connective tissue of the glands and not from the lymphoid cells. They infiltrate widely and are hard and immovable; their course is much more rapid than that of Hodgkin's disease. Carcinoma of this region is usually superficial, commencing in the skin, or is secondary to carcinoma elsewhere. The involvement is hard, nodular, infiltrating, and rapid in its progress.

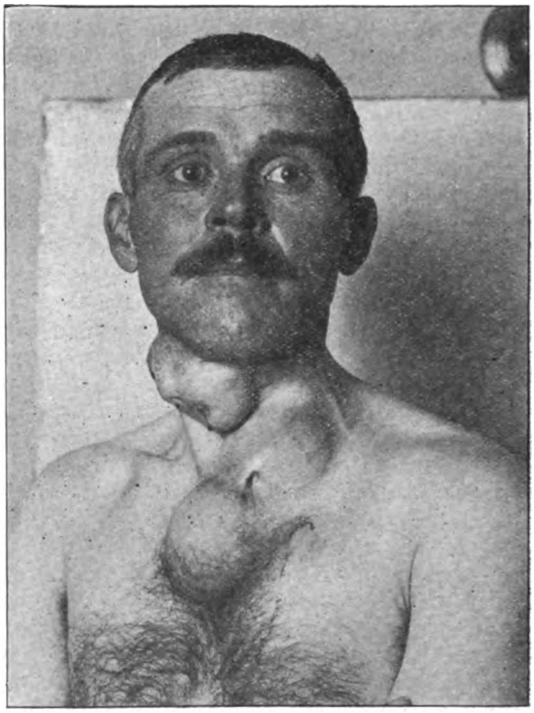
Branchiogenic carcinoma occurs in older individuals, usually females; they are deeply adherent and accompanied by pain. Lympho-sarcoma attacks one gland, usually in the upper part of the neck, breaks through the capsule and infiltrates the surrounding tissue. The skin early becomes discolored,—dark blue. Metastases occur in other organs but not to other groups of glands. Lymphatic leukemia is characterized by marked blood changes, chiefly a great increase in lymphocytes and a general lymphatic involvement. Prior to the use of Roentgen rays, and more recently the bacteriological efforts in treatment of Hodgkin's disease, arsenic was the main reliance, but the disease was almost invariably fatal. With these recent aids it may be proper now to remove the enlarged glands early. We have done this in one case with a satisfactory result thus far.

Mikulicz's Disease. A rather rare type of chronic inflammatory disease of the lachrymal and salivary glands was described in 1892 by Mikulicz,[8] and the condition bears his name. The author has had no personal experience with this disease. A small percentage of these cases are associated with leukemia and enlargement of the spleen.

Wilder Tileston[9] states that the cases to which the term Mikulicz's disease should be applied present the following features: chronic, painless, symmetrical enlargement of the salivary or lachrymal glands, or both, with or without enlargement of the spleen or lymph nodes. The disease runs a benign course with no tendency to recurrence after complete extirpation of the affected glands. A frequent cure is obtained under the use of arsenic, iodides or the x-ray and sometimes spontaneously. The case is supposed to be some infectious agent or a number of agencies. Tuberculosis, Hodgkin's disease and syphilis must be carefully excluded.

EMBRYOLOGIC MALFORMATIONS.

Branchial Cysts. The failure of one of the gill-clefts to close in the embryologic period results in a sinus in the neck or thorax, the inner opening of which is in the pharynx in the region of Rosenmüller's fossa or one of the tonsils. There may or may not be an outer opening; if one is present it usually occurs anterior to the sterno-mastoid muscle and inferior to the hyoid bone. The sinus, however, may be found in the median line. It is generally recognized now that the sinus originates from the second cleft.



Branchiogenic cyst.

If the sinus is imperforate a cyst results. These cysts may vary much in size and may be uni- or multilocular. After a long period of the existence of sinus or cyst, or both, the skin may break down and the cyst discharge. Minute examination will find the cystic tract extending upward through the platysma muscle and deep fascia of the neck to the great cornua of the hyoid bone, thence on between the carotids, reaching the pharynx at the point before mentioned.

The diagnosis of these cysts may be confused with the cystic hygroma, with abscess, lymphangioma, the cysts of abberant thyroids, tuberculous glands, and possibly lipoma and wens. The contents of these cysts varies from fatty, atheromatous material containing cholesterin crystals with absence of bacteria in non-infected cases, to that of a mucoid, gray, starchy material, the variation depending upon the character of the epithelial cells lining the cyst. If necessary, a portion of the cyst wall can be excised for examination. These cysts are frequently incised in the belief that they are abscesses. The only benefit of such an incision is to relieve tension. The proper operation is one of careful dissection.

Thyroglossal Cysts. Thyroglossal cysts result from incomplete obliteration of the thyroglossal duct, which extends from the foramen cecum to the isthmus of the thyroid. Like the branchiogenic cysts, they usually develop in young or middle life and occur at the base of the tongue or the floor of the mouth, or the cyst may appear in the midline, protruding above or below the hyoid bone. They may be confused with ranulas, dermoid cysts, and lipomata, and unless secondarily infected the contents are a gray, starchy mucus. The ranula is a translucent cyst filled with mucus and occurring at the base of the tongue. Dermoid cysts may occur in this location, but their contents establishes a diagnosis. The surgical treatment consists in carefully following up the duct to its origin. If a delicate probe cannot be passed through the duct, injection of methylene blue will aid in tracing its source. Failure to accomplish this generally results in recurrence.

NEOPLASTIC GROWTHS.

Benign. Lipoma occurs not infrequently in the neck, especially on the posterior surface. It is of slow growth and characteristic consistency, non-inflammatory, not painful, and regular in outline. Lipomata are not likely to be mistaken for other neoplasms; they are occasionally incorrectly diagnosed as wens and tuberculous glands; they rarely ever tend to malignancy; removal by incision is the only treatment.

Fibroma. These growths are not common in the neck; they originate in the deep fascia; they are painless, smooth, mobile, and yet their pathology must remain in doubt until they are excised, which is the only treatment.

Chondroma. True chondromas, aside from the mixed tumors of the salivary glands, are extremely rare in the neck. They are benign, of slow growth, and of characteristically cartilaginous feel. A true chondroma of the hyoid bone is illustrated in Hertzler's[10] work on tumors from a case of J. W. Perkins'. Operative removal is the only treatment.

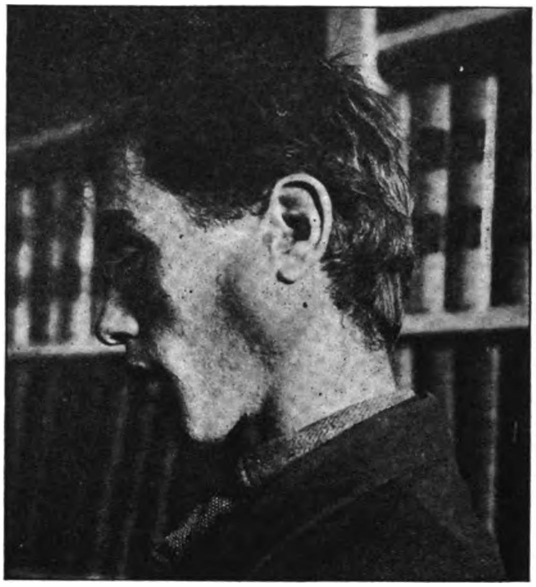
Wens or Sebaceous Cysts are of common occurrence in all parts of the neck; their superficial relations and rounded form identify them in their primary state, but when broken down and infected with liquid contents and inflamed surface the diagnosis is not always simple. They have been opened with the anticipation of finding an abscess and have been mistaken for tuberculous glands. The treatment is removal by dissection of the cyst wall; incision and drainage practically always being followed by recurrence.

Angioma. Angiomata are divided into hemangioma and lymphangioma, and the hemangiomata into superficial and cavernous. The neck and face furnish a common location for the superficial angiomata. They can be scarcely confused with any other growth. The red, purplish color, slightly elevated surface, and the gradual extension, if occurring in a child, establish their identity. The cavernous angioma, occurring more frequently in the back of the neck, has thin, vascular walls, with little or no musculature. They may be superficial or deep, and are sometimes confused with sarcoma. The simple angioma may be removed by electrolysis, radium or operation, if the surface is not too extensive, while the cavernous variety requires a careful and quick dissection or deep ligation.

Lymphangioma. Lymphangiomata are like the foregoing with less tendency for new growth of vessels; they also may be superficial or deep, and occur more frequently in the neck than elsewhere. They are sometimes designated as hydrocele of the neck, varying in size, increasing or remaining stationary, rising above the clavicle, but demonstrably springing from below. The diagnosis can only be confused with other cysts, and their contents of lymph tell the true story. Fortunately they are rather rare, for their treatment is unsatisfactory. They occasionally subside spontaneously. Operation may be difficult or impossible. Puncture and injection of iodine in inoperable cases is recommended.

Hygroma. Hygromatous cysts occur most frequently in the neck and axilla; they are probably the result of embryonic sequestration of lymphatic tissue and retain the power of persistent, regular growth. They are usually discovered at or shortly after birth, but may not reach a size sufficient to have them brought to the attention of the physician until some months or years later. The writer has recently reported two cases with operation, to which communication Dr. A. M. Rowley added one case. These cysts are thin-walled, contain clear fluid, and may be easily mistaken for branchiogenic cysts or broken down glands, as they grow to a large

Hygroma cysticum colli.



Mixed tumor of the parotid gland.

size, and in some cases are most disfiguring and do not respond to treatment. Their early recognition and careful dissection is important.

Teratoma. These tumors are divided into dermoid cysts and mixed tumors of the salivary glands. The dermoid cysts are not uncommon in the neck, occurring along the lines of the branchial fissures. There are two varieties, sequestration and tubal dermoids. The former is much more common and is caused by an inclusion of the skin at the region of the embryonic fissures. The tubal dermoids occur in obsolete canals; hence their name. These cysts may be taken for sebaceous cysts or lipomata; the diagnosis is established by aspiration. The contents vary with the character of the tissue included. Soft sebaceous material predominates. Dermoids of other locations with more complicated inclusions furnish various products of epidermal cells. Their treatment is excision.

Mixed Tumors of the Salivary Glands. Mixed tumors of the salivary glands occur most frequently in the parotid. The author has observed six cases, four of which were operated upon; all were of the parotid gland. Of 56 cases operated upon at the Mayo clinic 50 were of the parotid and 6 of the submaxillary glands. F. C. Wood[11] published a series of 42 cases in 1904, and Wilson[12] and Willis reporting from the Mayo clinic have given a tabulated series of 56 operative cases. From these 110 cases, which have been most carefully studied, conclusions can be drawn as to age, sex incidence, clinical course and tendency to recurrence. They occur somewhat more frequently in males, and during each decade from the first to the seventh, 66% during the first four decades.

There is a large amount of literature upon the subject, and there has been much discussion as to the etiology of these tumors. Wilson and Willis concluded that they are mesotheliomata of embryonic origin. They grow slowly; they may be hard with much fibro-cartilaginous tissue, or soft, and consist largely of a parenchyma varying from adult to embryonic. The former, or hard variety, are more apt to be benign; the latter malignant. They may be confused with other neoplasms, but when occurring in the parotid are so characteristic that the diagnosis is fairly certain. A microscopic section, however, may be necessary to differentiate these tumors from carcinoma and sarcoma.

Usually several years elapse between the occurrence of the growth and the operation for their removal; in the author's experience from twelve to fifteen years. Operation is usually feasible. The seventh nerve may be injured or destroyed with resulting facial paralysis, but it is fair to estimate that 75% may be radically cured. There were nine recurrences in the 56 cases operated upon at the Mayo clinic.

MALIGNANT.

Carcinoma and Epithelioma. Fortunately, primary carcinoma of the neck is comparatively rare. If a primary growth, the origin is usually in the skin, where it is under observation from the first, or a branchiogenic or thyroglossal cyst, where it is deep seated and not suspected until a considerable growth has occurred. If secondary, the primary growth will be found, or a scar following its previous removal, usually upon the lower lip, the cheeks, the tongue, the tonsils, or jaws, regions drained by the cervical lymphatics.

The primary epithelioma or carcinoma of the skin is much less common on the neck than on the face. As in other regions, it usually follows some chronic irritation or original benign skin lesions, as eczema, seborrhea, moles and cornua excrescences. They eventually ulcerate and must be differentiated from syphilis and lupus.

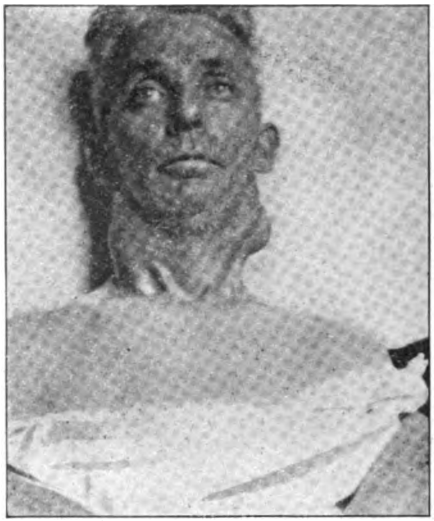
A careful dermatological study with the history and laboratory tests will guide us as to syphilis. The small, round, tubular nodule of lupus, with spreading ulceration and scar formation, will differentiate this lesion from cancer. The treatment is operative, the use of Roentgen rays or radium, or a combination of operation and some form of radiation. Kelly estimates that 95% of these superficial cancers are curable at a fairly early stage by radium. (Personal communication.)

The thyroglossal and branchiogenic carcinomata occur below the deep fascia of the neck more frequently in women of advanced years. Pain may be felt and is frequently referred to the ear before the tumor is in evidence. These growths may be confused with metastases or malignancy from other regions, or with chronic tuberculous adenitis, but their tendency to infiltrate and their irregularity and density are strongly suggestive of their true nature. Operation is rarely successful. Massive radiation probably holds out the only hope of cure. A case has come under the author's observation recently, where in a man of 65 carcinoma of this type has been markedly improved by the use of radium.

Secondary carcinoma in the lymph glands of the neck is not uncommon. The original growth is frequently on the lower lip, tongue, cheek or tonsils. This secondary invasion commences as a small nodule; it is hard and fixed from the first, and is a harbinger of alarming importance. With a primary carcinoma in evidence there can be little chance of error in diagnosis. Occasionally perhaps the glands may be infected with organisms of mixed infection, and some hope may be held that operation upon the original growth is not too late. Secondary carcinoma occurring after the removal of the original growth is especially hopeless.

Sarcoma. Sarcoma of the lymph glands is not a frequent occurrence in the neck; they spring from the connective tissue of the glands and tend to infiltrate early; the more cellular the more malignant they are, the small, round-celled variety being especially so. Their dense, infiltrating, immovable character impresses one at once as to their serious nature. Operation upon some of the more malignant types may hasten the vicious pathology; even securing a section may have a similar, unfavorable effect. Some form of radiation is the one hope in many of these growths.

Secondary sarcoma of the lymph glands of the neck may occur following sarcomatous invasion of the head and face; melanotic moles may metastasize to the neck. Such secondary growths, where one has knowledge of the primary lesion, leave little room for doubt in diagnosis. The prognosis is exceedingly bad under any form of treatment.



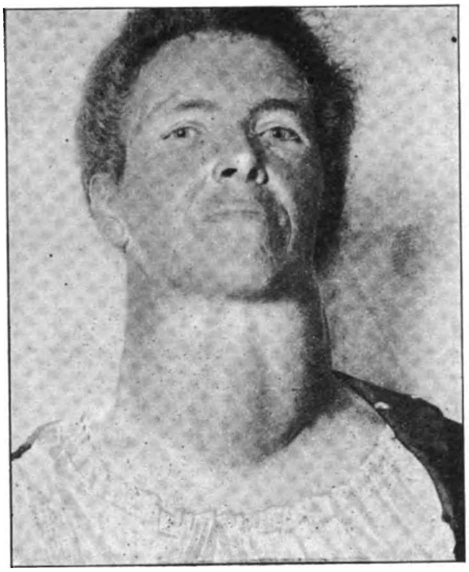
Lympho-sarcoma.

Lymphosarcoma. Lymphosarcoma is more common than sarcoma of the lymph glands. Microscopically the structure consists of lymphoid cells enclosed in a stroma. The tumor commences in one gland, early breaking through the capsule and invading surrounding tissue. Dark discoloration of the skin with breaking down of the subcutaneous tissue follows. While other groups of glands are not likely to be involved, metastases to other organs are common. These growths may be erroneously diagnosed as abscess or chronic inflammatory lesions. They are sometimes unwisely incised. At present radium seems to offer most hope for these serious lesions. A number of cases of serious lymphosarcoma are reported as having been entirely cured.

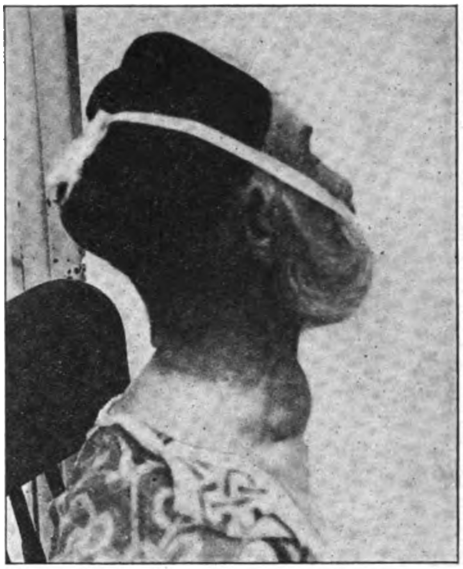
TUMORS OF SPECIAL ORGANS.

Thyroid: Physiologic Hypertrophy of Menstruation and Pregnancy. The period of puberty, more particularly in the female, menstruation and pregnancy, are often accompanied by congestion and appreciable bilateral enlargement of the thyroid gland. Unless excessive, this condition can hardly be considered pathologic. Undoubtedly, however, the thyroid gland is at times susceptible to unfavorable influences, as throat infection and functional irritation or stimulation of the sympathetic nervous system. Enlargement of the thyroid due to this physiologic congestion tends to subside with rest and hygiene.

Colloid Adenoma (Goitre) with or Without Cysts. The enlarged thyroid of the colloid type depends upon the increased size of the follicles which are distended by the colloid material. These follicles may coalesce and form cysts containing blood and serum, in addition to the colloid substance. Increased fibrous tissue may cause portions of them to be nodular; they may be tense or soft, unilateral or bilateral; they may be globular and well defined, or may spread across the neck a soft, compressible mass. There is little room for diagnostic error in these cases, but such is occasionally made, and cysts



Diffuse cystic goitre.



Malignant disease of the thyroid.

of other character,—lipomata and malignant disease,—are sometimes mistaken for goitre. In the absence of contra-indication most cases of this type are safely operable, especially those which are well outlined, distinctly cystic, or nodular and cystic. As a rule, operation is safe and simple and exceedingly satisfactory.

Parenchymatous Hyperplasia. The parenchymatous type of goitre is soft and succulent; the cut surface has a dark purple color. The amount of colloid, which is thinner than in the normal gland, is diminished. Thyroid enlargement may involve one or both lobes. It is less distinct in outline and usually of more rapid development than the cystic types. The enlargement may be of small proportions, and yet cause marked hyperthyroidism. In the majority of cases there is a mixed pathology, areas of hyperplasia and excess of colloid existing in the same gland. The accompanying symptoms of the condition, namely, tachycardia, tremor, prostration and weakness, with or without exophthalmos, lead the diagnostician to an inspection of the thyroid and the correct diagnosis. It is this type that calls forth most discussion as to treatment. Rest, hygiene, sedatives and a few remedies will often result in a remission of symptoms with, however, a tendency to recurrence. Ligation of afferent vessels and partial removal of the gland are required for a cure on more than 50%.

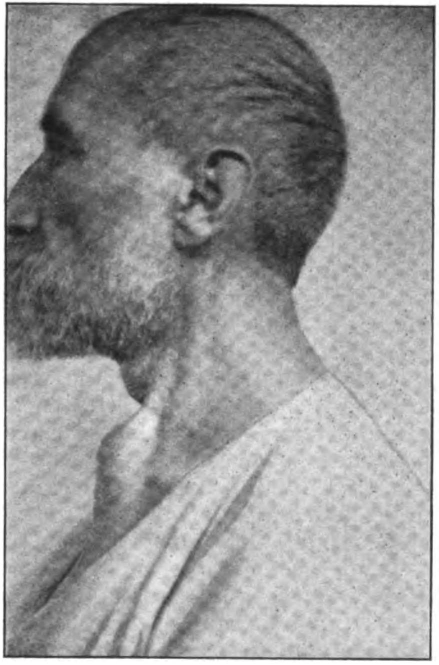
Fetal Adenoma. The adenomata of the thyroid are of the fetal and tubular varieties. The fetal type appears soon after birth; its structure is similar to the undeveloped gland. It becomes nodular and rises and falls with deglutition. The tubular resembles the fetal type closely and grows slowly; both are favorable for operation.

Malignant Disease.—Malignant disease of the thyroid includes carcinoma and sarcoma. Carcinoma of the thyroid is not common and generally develops rapidly in a previously pathologic gland; it is apt to be painful and may cause dysphasia; it may be hard and irregular or soft. Involvement and discoloration of the skin and enlarged veins below the growth are suggestive of malignancy. Like carcinoma elsewhere, operation is the chief reliance in treatment, but to offer any hope of permanent cure must be performed early. Pressure on the œsophagus and trachea may call for palliative operations for relief.

Sarcoma is still less common in the thyroid and possesses about the same clinical picture. In a goitre, apparenty previously benign, a sudden growth of an irregular, hard, infiltrating character, tending to involve the skin and break down, furnishes the best of evidence of malignancy. All varieties of sarcomatous cells are found in these growths; early operation is the only hope of cure.

Carotid Body. On either side of the neck, in the angle formed by the bifurcation of the common carotid artery, lies the carotid body. It is the size of a grain of rice, oval in shape, red, firm and vascular. Specific elements of the organ are said to be chromaffin, which spring from the sympathetic (embryonic) cells. They occur at adolescence or adult life in either sex. They grow slowly, but later may develop rapidly, producing pressure symptoms and a tumor of such appreciable size that a surgeon is consulted. The location of the growth, its rise and fall, with the underlying artery, the synchronous pulsation in both temporals and the slow growth, are aids in diagnosing this tumor from other neoplasms and aneurysm. These tumors have been declared benign and malignant by different pathologists. While in their early period they may be clinically benign, they are potentially malignant, taking on this character with a rapid growth later in their development. They may be mistaken for branchial cysts, lymphosarcoma or even lipoma. The diagnosis has usually been made during operation. The operation, if performed early, may be reasonably safe and satisfactory in skilled hands, but later, when the carotid arteries and the internal jugular vein are involved, it is technically difficult and formidable, carrying a mortality of 27%.

Aneurysm of Aorta and Carotids. The development of a soft, smooth, pulsating tumor along the line of a large artery, movable laterally but not longitudinally, carrying an increased bruit to the ear from that of the vessel below, suggests at once an arterial aneurysm. Carotid aneurysms occur in the ratio of one to twenty of other aneurysms. Aneurysm of the thoracic aorta is five times as frequent as that of the abdominal aorta. The condition of the other arteries, the presence of luetic symptoms, and the luetin or salvarsan test are valuable diagnostic aids. It is said, however, that diagnosis of aneurysm has caused more distinguished mistakes than almost any other lesion; no radical operation has been successful upon aneurysm of the aorta. The wiring operation of Prof. Halsted is alone permissible; for the carotid, ligation and aneurysmorrhaphy are the possible procedures.



Aneurysm of common carotid artery developing one year after sub-sternal thyroidectomy.

This review has been necessarily hasty and incomplete, but it is hoped that it may stimulate interest in tumors and infections of the neck, and that our efforts at accurate diagnosis in this field will be increased.

BIBLIOGRAPHY.

[1] Israel, James: Neue Beobachtungen auf dem Gebiete der Mykosen des Menschen," Virch. Arch., Band 74, Seite 15, 1878.

[2] Reclus, P.: Phlegmons ligneux du cou. In his Clin. de la Petie, Par. 1894, 140-149.

[3] Poirier and Cuneo: General Anatomy of the Lymphatics, by G. Delamere. Special Study of the Lymphatics in Different Parts of the Body, by P. Poirier and B. Cuneo.

[4] Frankel and Much: Zeitschrift für Hygiene, 1910, lxvii, 159.

[5] Negri and Miermet: Centralblatt f. Bakteriologie, 1913, lxviii, 292.

[6] Bunting and Yates: Arch. Int. Med., Aug., 1913; Jour. A. M A., Nov. 15, 1913, lxi, 1803, A. M. A., Feb. 14, 1914, lxvii, 516.

[7] Billings and Rosenow: Journal A. M. A., Dec. 13, 1913, lxi, 2122.

[8] Mikulicz, J.: J. Beitr. z. Chir. Festschr. (Billroth), 1892, 610.

[9] Tileston, Wilder: A Discussion of Mikulicz's Disease with Report of a Case of Lymphatic Leukemia in a Child with Marked Enlargement of the Salivary Glands. Amer. Jour. of Diseases of Children, Nov., 1911, Vol. 2.

[10] Hertzler, A. E.: Treatise on Tumors, Hildebrand, Arch. f. klin. Chir., 1894, 49, 167.

[11] Wood, F. C.: Annals of Surgery, 1904, Vol. 126.

[12] Wilson and Willis: Amer. Jour. Med. Sci., 1903, vol. 126.

RENAL INFECTIONS.

BY WILLIAM H. ROBEY, JR., M.D., BOSTON,

Instructor in Medicine, Harvard Medical School; First Assistant Visiting Physician, Boston City Hospital.

SOME years ago, I failed to make a diagnosis in a case of pyelitis seen in consultation. My examination was thorough enough except in one particular—I did not examine the urine but accepted the statement of the attending physician that it was negative. Doubtless some specimens of the urine were negative, but had a careful sedimentation been done, the pus cells would have been found and an explanation offered for the fever and chills from which the child suffered. Since my mistake, pyelitis has been much on my mind.

While the cause of much interest and writing on the part of genito-urinary surgeons, renal infection is a disease which the general practitioner should have constantly in mind since it may be mistaken for tuberculosis, typhoid fever, malaria, appendicitis or any other febrile disease. If the urine contains considerable pus, the diagnosis of cystitis may be made and the patient fruitlessly treated for this symptom month in and month out. Cystitis is generally a symptom and unless the diagnosis has been confirmed by cystoscopic examination should be classed with such meaningless terms as "indigestion" and "rheumatism," and should not be accepted as a disease any more readily than pain in the abdomen, headache or irregular pulse.

The degree of involvement of the kidney and the intensity of the infection make the disease present itself in a variety of ways. A cessation of symptoms may lead the physician to think that he has cured the disease whereas better drainage and improved health have merely held the symptoms in abeyance. It is well recognized that some cases of pyelitis involving the pelvis alone and not caused by a foreign body will recover, but others where the process is no deeper, may pass on to the chronic stage, undergoing acute exacerbations from time to time. This depends largely on whether the pelvis empties itself or not. In all cases of pyelitis where improvement is not speedy nor lasting, it is our duty to search out the etiology by special examinations of radiography and cystoscopy.

Pyelitis is an acute febrile disease characterized by the presence of pus in the urine. Pain and sensitiveness to pressure or a feeling of pressure are often the first symptoms, although they may be entirely absent. If there is a calculus or a plugging of the ureter there may be a typical renal colic. On the other hand, if the intrarenal pressure is not much affected and the drainage good, the local signs may be entirely wanting, although the urine may show macroscopic or microscopic pus, and there may be the constitutional signs of toxemia. Several specimens of urine may not show pus when the condition is unilateral, due to temporary blocking of the ureter, and of course while this lasts it is apt to confuse the diagnosis. It is clear that repeated and careful examinations of the sediment are necessary. Along with the pain in the lumbar region one may be able to detect some swelling of the kidney by careful bimanual palpation.

Pain, sensations of pressure, swelling by bimanual palpation may be greatest when the urinary findings are smallest, because of increased intrarenal pressure and poor drainage.

The most common symptoms are chills, fever, sweats, loss of weight and strength, general physical depression and digestive disturbances. In most of the cases I have seen the two signs which have stood out apart from the general constitutional disturbance have been tenderness in the kidney and pus in the urine. Even when the symptoms are very slight, this tenderness is more or less persistent.

The pus in the urine may be readily seen or it may require careful sedimentation. There may be casts indicating a pyonephritis although casts may appear for a time when the intrarenal pressure is great. On the other hand, there may be a pyelonephritis without the presence of renal elements.

The organisms responsible for the infection are the colon bacilli in the great majority of cases. R. M. Smith quotes Jeffries (*Quarterly Med. Jour.*, 1911, iv, 267) in a report of 121 cases, 67 were colon, 37 staphylococci, 10 streptococci, 3 pneumococci, and 4 miscellaneous. Channels of infection need not be considered more than to say that it may be an ascending infection by the ureter, although this source is doubtful, or the kidney may be involved through the lymphatics in the course of a general infection.

The treatment of pyelitis depends upon early diagnosis, which in turn depends upon a determination of etiology. Etiological factors are roughly divided into two groups: first, those that lower the resistance of the kidney by producing retention of urine by trauma or pressure congestion; second, by infection, direct, metastatic or ascending. Many of the acute cases recover spontaneously, while the chronic forms may resist all treatment. If there is not a prompt response to medical treatment a thorough search should be made for the reasons.

Pyelitis is a disease which may require medical or surgical treatment or both, and it is the duty of the practitioner to his patient and himself to determine the proper course as soon as the facts will permit.

Prophylaxis is very important:—

1. Remove, if possible, all causes of urinary stasis, such as urethral stricture, phimosis or hypertrophied prostate. Actual bladder tumors, ulcers or foreign bodies, can be discovered only by the cystoscope.
2. Care in catheterization, especially where catheterization must occur frequently, as in typhoid fever and after severe labors.
3. Flushing the kidneys in severe febrile diseases and in pregnancy.
4. Raising the general resistance of the patient.
5. In children, especially since many more cases occur in girls than boys, care should be taken during the diaper age.

If the condition becomes chronic a bacteriological search should be made and the urinary tract examined by the radiograph and the cystoscope. These examinations are safe only in the hands of experts since the technic and the interpretation of the findings are difficult.

Treatment is a broad subject from an etiological standpoint, but with the source of the infection defined it narrows down considerably. Some laboratory men who are enthusiasts in the use of vaccines believe that they have cured an occasional case, but in offering the treatment they certainly hold out very little encouragement. In the few cases in which I have tried them the results have been nil. Lyman (*Northwest Med.*, 1911, iii, 31) says that vaccines are of great value, but adds "many cases do not improve more rapidly than others without it."

In the acute cases there seems to be the greatest uniformity of opinion that the urine should be made alkaline and kept so for a considerable period of time and that free diuresis should be established. Colon bacilli are believed to develop less easily in an alkaline urine and phagocytosis of the bacilli by the leucocytes is more active in an alkaline medium. (Dick, *British Med. Jour.*, 1910, ii, 1134.)

Potassium citrate or sodium bicarbonate are the drugs most commonly used for this purpose. Betz (*Deutsch. Arch. f. Klin Med.*, November, 1912) is directly opposed to this view, and believes that the thin, weakly acid urine occurring normally in pyelitis is the most favorable culture medium for the colon bacillus but that it is unable to proliferate in a very acid, concentrated urine. He gives phosphoric acid and a meat and non-vegetable diet in order to make the urine strongly acid, limits the intake of fluids and gives hot air baths to produce concentration.

Calomel, ammonium and sodium benzoates, sandal wood oil, salol and urotropin are among the drugs recommended. Whatever is used, the antiseptic should be changed frequently. The action of hexamethylenamin depends upon its liberation of formaldehyde, and it has been shown that this occurs only in an acid urine. Some combine hexamethylenamin with alkalies like potassium citrate, thus producing unsatisfactory results.

Raising the general health of the patient is important as in all other infections.

If by cystoscopy and radiography, tuberculosis, abscesses, foreign growths, calculi or a hydronephrosis are found, then the treatment becomes surgical.

The following cases occurred in hospital and private practice:—

CASE 1. S. T., 55 years, married. Entered the hospital, June 15, 1914.

F. H.—Negative. No early diseases remembered. Cough for last two years "caused by a tickle in the throat"; no sputum. Bowels regular.

P. I.—For the last two years spells of coughing, with "dry heaves" in the morning.

Began to be tired all the time and to have pain in the legs. The bowels became irregular. No pain at any time in the abdomen, but for the last three months has had distress in the epigastrium after a heavy meal. About the same time discovered a mass in the left lower quadrant which seems to vary in size, but on the whole not to be growing larger. Belly often full of gas. For seven or eight weeks there has been a severe aching pain across the lower part of the back at night. Slight dyspnea on exertion. The urine was "milky"; stains the sheets yellow and "starches" them. Lately has felt better. Three years ago weighed 135 pounds, now 116.

P. E.—Generally negative except in the left abdomen under the costal margin there is a bulging with dulness. In this area is a tumor, size of a large grape-fruit with firm smooth edge, slightly tender on palpation with movable nodules over the surface. Tenderness in the left costo-vertebral angle. Liver and spleen not palpable. On deep inspiration the upper edge of the mass could be differentiated from the spleen. Temperature was never higher than 99° F.

The tumor remained unchanged by moving the bowels with oil enemata. White count, 18,000. Hg., 85%.

Urine: Generally pale, average sp. gr. 1.008; albumin ranging from absent to a slight trace. Every sediment showed considerable numbers of leucocytes and cystoscopy showed a large amount of pus. The Wassermann was triple positive.

The diagnosis of infected kidney was made at once. From the age of the patient with loss of weight and strength, malignant growth was considered, but after a few days in the hospital the general improvement was marked. There was no cachexia. Operation was necessary, but whether for pyonephrosis, hydronephrosis or calculus was not clear. At operation the kidney was found to be increased to about three times its normal size and was trabeculated with many cavities filled with a pea green pus, having a sweetish, not unpleasant odor. These were the pus cavities which we felt as nodules before operation. In the lower pole was found a calculus. Unfortunately the pus was not studied bacteriologically. The patient made a good recovery.

CASE 2. A. M., entered about the same time, 19 years, unmarried, a stitcher. *F. H.* was good, no tubercular history.

P. H.—Morbilli; parotitis as a child. Fleeting pains in the shoulder and other joints at times. Micturition four or five times in the day and one to four times at night. No burning.

P. I.—Five weeks ago awoke in the night to find that the left shoulder was tender, hot and painful on motion. It became worse during the following days, but there were no constitutional symptoms. Four weeks before entrance had a sudden sharp pain in the left hip, not radiating, followed by a steady dull pain, which has persisted. Two weeks ago a swelling on the outer aspect of the left arm, which broke down two days ago and pointed. Eight years before the right knee became painful and stiff, and after a week was operated on at the Children's Hospital.

P. E.—Negative except for abdominal tenderness in left lumbar region and costo-vertebral angle. No tumor made out; liver and spleen not felt.

Left thigh held flexed and motion limited by pain due to pull on abdominal muscles. No ankylosis nor tenderness in hip joint. No edema. Knee-jerk present on the right. Fluctuating tumor in upper third of left arm, not connected with the shoulder joint. White count, 18,000 to 22,000. Average temperature in the morning 99° F., 102° in the evening.

Urine in each examination showed a trace of albumin, occasional hyaline and granular cast; many red and white cells. The x-ray examinations of left hip and arm were negative.

It was thought at first that this was a tubercular hip, but the negative radiographs ruled out this possibility as well as psoas abscess, which was also considered. The pain in the costo-vertebral angle and the constant appearance of pus in the urine pointed to a kidney infection.

At operation the condition was found to be a perinephritic abscess; incision and drainage with satisfactory recovery.

CASE 3. M. W., 17 years, single; paper sorter; admitted to the Boston City Hospital, August 11, 1914.

F. H.—Negative.

P. H.—"Never sick in my life." Sore throat in winter for the past two years. Abscess of the scalp three weeks ago.

P. I.—Six days ago had anorexia, feverishness and pain in the small of the back. Buzzing in the right ear without pain. Paracentesis by a local doctor; red-tinged discharge. Diarrhea for two weeks. Since onset some burning during micturition and nocturia two or three times.

White count, 7000. Urine: pale, slightly cloudy, many pus and small round cells.

This was probably a pyelitis resulting from a general infection or a focus in the scalp or post-nasal space.

Under urinary antiseptics and rest in bed, the condition gradually improved.

CASE 4. M. J. B., 45 years, married, entered Boston City Hospital Oct. 22, 1914.

F. H.—Negative.

P. H.—Scarlatina at 7 years of age; one child 14 years ago.

P. I.—More or less irregularity of micturition since birth of child. July 5, 1914, went to bed with soreness in the right flank. Severe chills for two days followed by fever and prostration. Remained in bed for five weeks with more or less irregular temperature and anorexia; backache and slight burning during micturition. At that time the condition had the appearance of typhoid fever, although the temperature was not characteristic and the Widal test persistently negative. After that she was up but in a state of invalidism.

I saw her in consultation Sept. 9, 1914, with Dr. H. V. Reynolds.

Except for a palpable, slightly tender, but not enlarged right kidney, the physical examination was negative. The Hgb. was 70%. White count, 10,000. The urine showed a very slight trace of albumin with moderate sediment containing pus free and in clumps and a few squamous, caudate and large round epithelial cells; very rarely a highly refractile cast and a coarse granular cast. No blood.

A catheter specimen from the bladder gave many colonies of colon bacilli. From these cultures a vaccine was made but the patient gave no signs of improvement from its use.

On Oct. 20 I saw her again and advised admission to the hospital for radiography and cystoscopy. Both of these examinations were negative. With rest in bed the general strength and digestion markedly improved. Since no pus was obtained from the right ureter during catheterization it would raise the question whether this case had gone from pyelitis to pyelonephritis, since the renal elements persisted after the intrarenal pressure was apparently reduced. As to the diagnosis of typhoid fever which was made in July, I have seen this mistake several times. Typhoid has a temperature which generally rises gradually and is then maintained, whereas the temperature of pyelitis undergoes greater excursions in the twenty-four hours. In this case the Widal test was persistently negative, while in typhoid it occurs at some stage in the disease in over 95% of the cases (McCrae).

If chills persist, as they often do in pyelitis, they should suggest some disease other than typhoid. Rose spots are very apt to appear in crops in typhoid and the mental condition becomes dull; neither appeared at any time in this patient. As to the subsequent treatment of this patient, the negative findings by special examinations make us confident in proceeding along general lines by giving urinary antiseptics and increasing the patient's tone.

Case 5. A. G. L., 46 years, married, housewife.

F. H.—Good.

P. H.—Never very strong. In 1905 had an operation for the removal of an acute appendix and since then has had a number of attacks of so-called "inflammation of the bladder."

P. I.—In 1911 this patient had an attack of painful micturition with small amounts of pus in the sediment. With rest and the use of various urinary antiseptics the condition gradually quieted down. In September, 1912, another similar attack. There was pain in the right flank and the kidney was tender on palpation but not enlarged. The urine showed a very slight trace of albumin and the sediment contained a moderate number of pus cells. Dr. A. L. Chute saw her in consultation. He made the following report: "In the first place I could find no organisms in smears made from the sediment of the bladder urine. When there is a lot of pus, that is suspicious of tuberculosis; when there is only a little as with Mrs. L., it may simply mean a run-out culture of some common pyogenic organism. In several slides that I used a differential stain upon, I was not able to find any acid-fast bacilli. I found a little pus coming from her right ureter; practically none from her left." "I believe her trouble comes from a dilated kidney pelvis on the right and that it constantly harbors some organisms that would be evident on culture, though I do not find them in smears. That from time to time it flares up and then she has her acute attacks with secondary involvement of the bladder and the symptoms referred to the bladder."

A few weeks prior to this attack, Mrs. L. had a cough with a doubtful area of consolidation in the third space on the right front. This, with the fact that she had lost some in weight and strength made me fear tuberculosis. Dr. Chute inoculated two guinea-pigs, one with a catheter specimen from the right kidney, the other from the left. At autopsy both pigs were entirely free from tuberculous lesions.

Dr. Percy Brown made radiographs of the kidneys; the pelves did not seem to be enlarged and there were no calculi. The only abnormality that could be found by radiograph was a slight kink in the right ureter and after the injection of collargol the pyelitis quieted down. The patient was comfortable for a little more than a year. She felt so well that she began to overtax her strength when she had another attack of pyelitis, not so severe as the one I have just described.

In this case we must follow the same line of treatment as in the one M. J. B. Having ruled out as carefully as possible conditions indicating operative treatment we are justified in planning a medical course which will as much as possible hold the infection in check.

Case 6. C. V., 28 years; married; farm work.

F. H.—Negative.

P. H.—Difficult to obtain. Three months pregnant.

P. I.—Entered the Boston City Hospital July 11, 1914. Four days prior to entrance went to bed having a severe constant pain in the left flank. The left leg was partly flexed and could not be fully extended without causing great pain. Slight malaise but no cough, dyspnea, palpitation or edema. No nausea, vomiting or abdominal pain. Pain during micturition; rarely nocturia. The expansion of the right chest was greater than the left and there was a definite swelling with fluctuation above the left iliac crest. The urine was free of albumin and the sediment contained a few pus cells and large round cells. No blood and no casts. The morning temperature was normal, the evening averaged 104° F. This tumor increased so rapidly in size and tenderness that through a *faux pas* she was operated upon before the radiograph which showed several renal calculi was finished. A perinephritic abscess was drained and the patient was discharged relieved, having refused, much to my regret, but not my surprise, to consent to a second operation. The abscess contained green pus similar to that found in the case S. T.

Case 7. R. R., 11 years, female; seen in consultation with Dr. Charles L. Knight. Always well, but a tall, thin, delicate looking girl.

P. I.—Very sudden onset with chills, sweating and temperature ranging between 103 and 105° F. General physical examination negative except for the most marked tenderness I have ever seen over the kidney in a case of pyelitis in a child, so marked that perinephritic abscess was considered at once. The urine was filled with pus and blood, but with the free use of hexamethylenamin the condition quieted down in a week. In four months she has had as many similar attacks much less severe. As it is, the child is in a state of invalidism and the family has objected to the more searching methods of diagnosis which Dr. Knight has proposed. Such a waste of time in making a correct diagnosis we feel to be entirely unwise.

In conclusion, a report of these infections by a medical man seems not inappropriate since practitioners are the ones who must first see them, and upon their promptness in making a diagnosis, based on a careful etiological survey, depends the outcome.

Cases of pyelitis of tuberculous origin should not be allowed to continue until the bladder is involved.

Renal infection must be considered in the differential diagnosis of every febrile affection.

The urine may show much or little according to the degree of intrarenal pressure and drainage and the condition of the ureter, so that frequent and thorough examinations of the sediment are necessary.

The two most constant signs are pus in the urine and some degree of tenderness in the kidney by bimanual palpation.

I desire to thank Dr. Arthur L. Chute for several suggestions and the other physicians mentioned for the privilege of reporting their cases.

Clinical Department.

A CASE OF HUMAN RABIES.*

BY HARRY LINENTHAL, M.D., BOSTON,

Physician to Out-Patients, Massachusetts General Hospital; State Inspector of Health.

THE following case of rabies which was observed closely from the time the patient was bitten through the development and termination of the disease, presents many features of interest and a detailed report of it is justified. The patient received a full course of intensive Pasteur treatment without developing an immunity. Moreover, the quinine treatment which Harris[1] reported to have cured a case, was tried without avail in this case, equally unavailable was a new method of treatment tried.

M. O. N., twenty years of age, was bitten by a stray Scotch collie in the left thumb while walking in the street on the morning of July 25, 1914. The wound consisted of a slight longitudinal superficial abrasion of the distal phalanx of the left thumb and a punctured wound at the root of the nail into the matrix.

The dog did not, as far as could be learned, attempt to bite any one else but remained quietly on a near-by lawn till he was shot by a police officer about two hours later. As is unfortunately too often the case, the carcass was disposed of without an examination of the brain being made.

After being bittten the patient immediately reported to his family physician, who bathed the thumb for twenty minutes in 1:1000 corrosive sublimate solution and applied a corrosive dressing. The dressing was removed on July 27 and the wound was practically healed.

Several days later the case was brought to the attention of the State Department of Health by the family, who asked that Pasteur treatment be administered. Virus was obtained from the Hygienic Laboratory of the Public Health Service in Washington and on Aug. 1, seven days after the patient was bitten, the treatment was started.

The course of the treatment was uneventful with the following exceptions: On the seventh day of the treatment there was a very slight local reaction without constitutional disturbance at the site of the first injection. This cleared up in twenty-four hours. On the ninth day there was a slight local reaction at the site of the injection of the previous day. This reaction lasted less than twenty-four hours. On the thirteenth day of the treatment the patient complained of headache and nausea. The headache persisted for several days, during which time, however, his temperature remained normal. The treatment terminated on Aug. 21 and the patient was discharged, feeling in his usual good health. He was instructed to report from time to time as to his condition so that we might keep in close touch with him. He was cautioned to avoid any excessive physical exertion, to avoid exposure to cold and alcoholic beverages.

On the afternoon of Sept. 8, eighteen days after the completion of the Pasteur treatment and forty-five days after he was bitten, he began to feel a numbness of his left thumb, which during the night extended up to his elbow; in addition to the numbness he experienced from time to time a sharp stinging pain shooting down his left forearm. An examination made on the morning of Sept. 9 was entirely negative. He appeared in his usual good health, his deep and superficial reflexes were normal, and there were no sensory disturbances in his left thumb and forearm, the site of the numbness. The subjective feeling of numbness was much less than on the previous night. He reported that since the termination of the Pasteur treatment on Aug. 21 he felt well, his appetite was good, his bowels were regular and he slept well. He was kept under observation all day but nothing developed. The next day the patient's mother reported by telephone that he had a sleepless night and that he was not feeling well generally. In order to keep him under constant observation and to have him near where he could be easily reached, arrangements were made with the Peter Bent Brigham Hospital, where he was admitted on the afternoon of Sept. 10. On admission he was found to have a slight elevation of temperature, otherwise the examination was entirely negative.

---

* I am indebted to Dr. C. Frothingham on whose service in the Peter Bent Brigham Hospital the case was admitted and to Drs. F. B. Grinnell and R. Kohn of the Department of Preventive Medicine of Harvard Medical School who followed the case with me.

On Sept. 11 the numbness had diminished except when the thumb where he was bitten was pressed. His neck seemed a little stiff, but with distraction of patient's attention it could be easily moved. His reflexes were normal. There were no Kernig and no other signs suggestive of meningeal irritation. Heart showed a slight respiratory arrythmia. Slight elevation of his temperature persisted.

His urine was straw colored, acid in reaction, 1.009 specific gravity and except for a slightest possible trace of albumen was negative.

An examination of his blood showed a white count of 14,000, of which 57% were polynuclears, 26% large mononuclears, 17% small mononuclears, erythrocytes not remarkable.

On the morning of Sept. 12 the patient complained that his ears were particularly sensitive to sounds. He was distressed by the ordinary sounds in the ward so that he had to place pieces of cotton in his ears. He also complained of double vision. Examination showed marked diplopia when focusing on an object two feet away; marked nystagmus particularly when eyes turned to right. Paresis of right external rectus. All superficial and deep reflexes were present. The plantar was present on the right, on the left the normal plantar was absent but there was a contraction of the fascia lata when the sole was stimulated. There were no Babinski, Oppenheim or Gordon reflexes, no Kernig and no neck sign.

At 1.30 in the afternoon of Sept. 12, the patient had a moderate chill, there was a marked general hyperaesthesia with increased response to stimuli of all kinds. Photophobia became extreme. There was dilatation of the right pupil though it reacted to light. The muscles of the eyelids twitched continually and there were also occasional slight twitchings of the muscles of the arms, more marked on the right side. He complained of a choking sensation and began to raise large quantities of saliva. His respiration became jerky and sobbing in character and spasms of the muscles of deglutition became pronounced. He would make quite elaborate preparations before taking a drink, such as clearing his throat, changing position, etc., he would then take the water in his mouth and hold it there for several seconds; then he would make a sudden effort to swallow it, bringing on severe spasms. He was given a gram of chloral and fifteen mgms. of morphia, which quieted him somewhat.

His mind was perfectly clear during the afternoon; towards evening he became mildly delirious, was rather talkative, though well oriented.

At eight o'clock Dr. I. C. Walker administered 14 c.c. of salvarsanized serum intraspinally. Fifteen minutes later he was given 1 gm. of quinine and urea hydrochlorate intravenously. There was an immediate violent reaction to the intravenous injection, the patient's face became flushed and dusky, he broke out in a profuse perspiration and within one minute after the injection he complained of intense buzzing in his ears. His pulse became somewhat accelerated and he was distinctly uncomfortable. His condition steadily grew worse, so that in view of the intense reaction to the quinine no more was administered. About midnight he became noisy, delirious and irrational and was restrained in bed with difficulty. He had hallucinations of dogs chasing him. Several doses of morphia and atropine were given to him with little effect. The patient gradually became weaker and died at 4.20 a.m. on Sept. 13 of respiratory failure.

The spinal fluid, 25 c.c. of which was withdrawn at the time the intraspinous injection was given, was slightly cloudy, forming a delicate filamentous clot on standing. There were 600 cells per cmm. of which 40% were polymorphonuclears, 20% small lymphocytes, 38% large lymphocytes and 1% endothelials. No plasma cells. Wassermann negative. Dr. F. B. Grinnell injected ½c.c. of the fluid subdurally into each of four rabbits; none of them came down with the disease.

MORTALITY FROM RABIES.

The incidence of rabies from bites of rabid animals as compiled in different statistics shows considerable variation. It depends upon the age of the person bitten, the severity of the injury and the location of the bite, the nearer the head the more likelihood of the development of the disease. From the statistics compiled by various writers it would seem that about 16-20% of persons bitten by rabid animals develop the disease.

Once the symptoms of the disease develop the termination is almost invariably fatal. Some aborted types of the disease have been reported as well as recovery after symptoms have developed, but the diagnoses in such cases have been questioned. It is safe to state that if recovery occurs the disease was almost to a certainty not rabies.

Pasteur treatment has reduced the mortality from the bites of rabid animals to about 1%. Not all deaths from rabies among those taking the Pasteur treatment, however, can be regarded as due to the failure of the treatment. The establishment of an immunity to rabies by the injection of attenuated fixed virus is a slow process requiring three weeks. Fortunately the incubation period of rabies is usually a long one so that there is sufficient time to estabish an immunity. Some cases, however, have a short incubation period, and the disease develops before an immunity can be established. Such cases cannot be regarded as failure of the treatment. That certain individuals, however, will fail to develop an immunity by the treatment is shown by the occasional development of the disease long after the treatment has been completed.

In this case eighteen days elapsed between the completion of the treatment and the onset of the symptoms, a time sufficiently long to establish an immunity if the treatment were effective. This case must be regarded as one of the rare failures of the Pasteur treatment.

TREATMENT OF RABIES.

In 1913 Moon[2] published experimental results with the use of quinine in the treatment of rabies in dogs. Dogs to whom quinine sulphate was administered recovered from rabies while those who did not get the treatment died from the disease.

In October of the same year Harris[1] reported a case of human rabies which recovered after the intravenous administration of quinine and urea hydrochlorate. The experimental results of Moon have not been confirmed by Frothingham and Holliday and by Cummings. Nor has quinine proved efficacious in two cases of human rabies reported since the publication of Harris's report. The case reported here must be added to the other cases unsuccessfully treated with quinine.

Salvarsan and neosalvarsan have been used unsuccessfully in the treatment of the disease. As far as I can find, this was the first time salvarsanized serum was used intraspinally, but unfortunately with no success.

PUBLIC HEALTH ASPECT OF RABIES.

I have had the opportunity to see two cases of human rabies within a few months. The case not here reported I saw in the terminal stage of the disease. The patient, a man of 45, was bitten by a dog six weeks previous to the development of the symptoms. The dog was killed by a police officer and the carcass disposed of without an examination being made. No Pasteur treatment was given.

To see a case of human rabies is sufficient to make one wish never to have to see another one. The pity of it all is that this most horrible of diseases is preventable. What can be accomplished by preventive measures can be seen by what has been achieved in Australia and England, where by the simple muzzling of dogs the disease was entirely eradicated.

In the nine-year period 1905-1913 inclusive, twenty-five deaths from rabies have been reported in Masssachusetts. We must assume the responsibility for the inexpressible physical and mental suffering of those afflicted, for the agonizing states of mind of the families and friends of the victims, and for the anguish and anxiety of those bitten who undergo the treatment. This dreadful disease exists with our consent and its victims die with our approval.

REFERENCES.

[1] Journal American Medical Association, Oct. 25, 1913.
[2] Journal Inf. Dis., July, 1913.
[3] Journal Medical Research, Vol. xxx, 1914.
[4] Journal Inf. Dis., Vol. xv, 1914.

Medical Progress.

REPORT OF PROGRESS IN MENTAL DISEASES.

Part I.

By Henry R. Stedman, M.D., Brookline, Mass.

PARAPHRENIA.

Under this head Kraepelin[1] separates from dementia precox a new group, still employing the criterion of the final outcome. He says that in dementia precox the disorganization of the psychic personality affects chiefly the affective life and will. The paraphrenic group, a small one, in spite of manifold points of accord with the manifestations of dementia precox yet has far less influence upon the affects and will, and consequently results in much less disturbance of the inner character of mental life. The main disturbance here is with the intellectual functions. These patients even in the last stages do not show the affective dulness and indifference which represent so frequently even the earliest signs of dementia precox. The actions and conduct are in the essence affected only by the abnormal trend of thought and mood. "Independent disturbances of the will," which tend to accompany dementia precox in such manifold form (*e.g.*, mannerisms, impulsive acts, stereotypies, etc.), occur here only exceptionally.

(1) *Paraphrenia Systematica,* characterized by the insidious onset of steadily growing delusions of persecution, with later ideas of grandeur but without destruction of personality. The disease takes years to develop; ideas of reference and sense-falsifications play a considerable part in its evolution. The delusions are well systematized and may be accompanied by memory falsification. There seems to be no end-stage as the disorder continues progressively throughout life. Recovery does not occur, but it is especially emphasized that there is no loss of interest.

The close resemblance of this picture to that described by others under the title of paranoia needs but little emphasis. In speaking of the relation of paranoia to dementia precox Kraepelin claims that there can be no difficulty in distinguishing between the two because of the absence in the former of any evidence of independent disturbances of will or of signs of affective deterioration. This distinction seems hardly to hold good with regard to paraphrenia systematica and we must await the appearance of the volume dealing with paranoia for enlightenment.

(2) The *expansive type* characterized by the rich development of grandiose ideas, generally with heightened mood and some slight excitement. This is an extremely interesting, though small, group composed almost entirely of women, and the cases have hitherto been usually classed with the manic-depressive disorders, as was done by Kraepelin himself, or with paranoia. The disorder is of slow progressive evolution and like the last, reaches no end-stage and presents little or no loss of interest.

(3) *Confabulating form,* very similar to the last, but characterized by the development of very marked memory falsifications.

(4) *Paraphrenia Phantastica.* Under this name are included the small group of cases originally classed as dementia paranoids. They are characterized by the development of the most phantastic and incoherent delusions. Beliefs are elaborated and maintained which seem to surpass

the boundaries of possible credence. In this type again evidences of disorder of affect and will are more or less absent.

The separation of these types of "paraphrenia" from dementia precox is based upon the absence of affective and volitional deterioration and also upon the progressive course which seems to lead to no final end-stage. The step is unquestionably consistent with Kraepelin's general principle that the end-results represent the character of the disease process and it has the further advantage of removing some of the difficulties experienced by those who regard dementia precox as a destructive brain disease. With Kraepelin we must be content to await further study to determine the justice of the step, and so long as we do not allow ourselves to be entangled in the enticing web of exact classification and regard dementia precox, paraphrenia and their various subtypes as established disease entities we may be grateful for the clear delineation of clinical facts.

THE ABDERHALDEN TEST IN MENTAL DISEASE.

Simon[2] takes up the claim of Fauser as to the findings of the Abderhalden test in certain types of insanity with special reference to dementia precox. In surveying the literature one cannot help being impressed, on the one hand by the wonderful uniformity of the results reported by Fauser and the wide divergence from those of certain other authors, like Hauptmann and Bumke. He thinks that there is good ground to suspect that Fauser was too enthusiastic in his views and also that his opponents may have lacked complete control of the technic. Fauser himself states that he obtained reaction with sex gland repeatedly in cases in which it was unexpected and that the diagnosis between manic-depressive insanity and dementia precox could not always be made with certainty. Simon relates his own experience with the use of the test in 106 cases and says, "to summarize the results" that a sex gland reaction may be obtained in nearly if not all cases of dementia precox at some stage or another, but that this action may also be obtained in other forms of insanity, and does not attempt to explain them. He must, therefore, conclude that Fauser's rule has exceptions or that the positive findings in manic-depressive insanity or paresis are due to errors of diagnosis or technic. The fact, however, remains that in dementia precox the positive reaction is the rule, while in the purely functional psychoses it is the exception. Simon, therefore, discusses at length the technic employed and which he thinks meets fairly any criticism from the technical point of view as far as our knowledge goes at present. He believes, however, that advances can still be made, and while we cannot, as yet, draw positive conclusions regarding the significance of the reaction in dementia precox, certain possibilities suggest themselves. One of these is that of a secretion of the sex glands in dementia. "Considering the problem from the clinical side, the all-important question of course suggests itself, whether or not the reaction has any relation to the pathogenesis of dementia precox. Theoretically, this is, of course, perfectly possible. Granted that anti-sex gland ferments do occur in the circulation in dementia precox, and that their presence was the outcome of the appearance in the circulation of an abnormal secretion or of abnormal cells, then we may also assume that digestion of these cells or cell-products will take place, and that all conditions would thus be given for a chronic protein intoxication which might very well expend itself on the central nervous system. Should this be true, then we might also expect that the administration of sex gland to such patients would cause an aggravation of the patient's condition, while partial or entire castration, possibly combined with the transplantation of normal organs, might similarly be expected to have a beneficial influence. Evidently, the problem is now open to investigation from many sides, and it does not seem unreasonable to expect that definite advances will be achieved in the near future."

Orton,[3] concluding a careful critical digest of the literature bearing on the Abderhalden method, reviews the situation as follows: Many defense enzymes are reported in cases of organic psychoses which are not found in normal controls or in any number in the strictly functional psychoses. In the great majority of dementia precox cases the ferments reported are those against brain or the sex glands, or the two combined. When sex gland reactions occur they follow a strict sex-specificity, *i.e.* male sera react to testicular extracts, but not to ovarial and vice versa. In a smaller number of cases of dementia precox thyroid dysfunction, either by itself or associated with brain and sex gland, is recorded. Cases do occur, however, in considerable numbers in which these so-called characteristic reactions are lacking and the same reactions have been found in other psychoses, notably general paralysis, and, by one investigator, in idiocy. This in itself he considers sufficient to preclude considering the test as of great value as a diagnostic means, until further refinements of technic or larger series of carefully studied cases have been reported. The application at present to border-line cases for the purpose of diagnosis or the altering of clinical diagnosis on the ground of serological findings seems unjustifiable, as the clinical study of the case must still be considered the means of control of the specificity of the reaction. Further studies should include also better classification of cases than simply dementia precox, and preferably short abstracts of the clinical features of the case. The results of one or two investigators seem to indicate that variations may occur in different stages of the disease, *i.e.* negative reactions in terminal cases and differences between the various types.

Even if we accept the theory and the results of the most hopeful investigators, we are only brought to the beginning of a wider field of investigation, as by the interpretation of the theory the results speak only for a faulty metabolism in specific organs and as yet give no light on the underlying causes, *i.e.* the fact that the metabolism of the testicle and brain are disturbed gives no insight into the cause of such disturbance.

THE COLLOIDAL GOLD REACTION IN EXAMINATION OF THE CEREBROSPINAL FLUID.[4]

The importance of the colloidal gold reaction, otherwise known as Nonne's or the gold chlorid test, has been recognized for some time, but until recently few have known within what limitations its value lay. It is essentially a test for an increase in the globulin content of the cerebrospinal fluid, using delicate color reactions in a standardized solution of colloidal gold as an indicator. The requisites for the test are cerebrospinal fluid obtained without a trace of blood, scrupulously clean glassware, and a colloidal gold solution prepared with extreme care. With these essentials at hand the performance of the test is comparatively simple. Miller and Levy[5] give explicit directions for preparing the solutions and performing and interpreting the results, together with an extended series of observations in which the results of the Wassermann test on the blood and cerebrospinal fluid, cell and globulin estimation on the fluid and the colloidal gold reaction are compared in a great variety of clinical conditions. These tables show that normal cerebrospinal fluid gives negative reactions, but that in inflammatory conditions of the meninges, as tuberculous and purulent meningitis, the test is positive; hence it is of no value in distinguishing between these and syphilis. The reaction is inconstant in secondary and tertiary syphilis, and has no advantages over other diagnostic procedures in these conditions. The evidence seems to show that colloidal gold reaction is most constant in general paresis and hence will be found of most value in the differentiation of this condition from others with which it might be confused. The authors suggest that this test may be found more sensitive than others now employed for indicating the results of specific therapy in syphilitic diseases of the central nervous system. The report is an example of what should be done with every new procedure either curative, prophylactic or diagnostic. Tests should be made in large numbers of diverse conditions and conservative conclusions drawn from the results as to the value and limitations of the procedure in question.

THE CATATONIC SYNDROME AND ITS RELATION TO MANIC-DEPRESSIVE INSANITY.

Kirby[6] states that according to Kraepelin, all non-organic cases with catatonic symptoms belong to the dementia precox group, and such manifestations were looked upon as significant of a deterioration process. Kraepelin, of course, admits that about 13% of the catatonics appear to recover, but the permanency of these recoveries he regards as unsettled, and inclines to the view that they are probably only remissions. Wilmans later reviewed Kraepelin's own Heidelberg cases, and found the catatonic symptoms, as evidence of a deterioration process, had been greatly overrated.

The catatonic syndrome is not a clinical unit, and it is probable that deteriorating and non-deteriorating catatonic cases represent fundamentally different reaction types. A review of a large material has shown that in acutely developing catatonic states, when not preceded by any ominous prodromal symptoms, recovery, with few exceptions, takes place, and in some instances after a duration of several years.

The possible relation of these acutely developing catatonic states in relation to manic-depressive insanity is discussed, because the subsequent history of such cases shows not infrequently manic attacks. Four such cases are described. The most reliable prognostic data in all these cases are gained from a close study of the personality, and the mode of development of the psychosis.

The author believes that Kraepelin overvalued catatonic manifestations as evidence of a deteriorating psychosis, and that many such cases have served to swell unduly the dementia precox group.

CLINICAL EXAMINATION OF THE MENTAL STATE OF DEMENTS.

Ballet and Genil-Perrin[7] have worked out a very practical scheme for the examination of the mental state in cases of dementia. It is essential for comparison of cases that some scheme should be adopted and regularly utilized, and the one here elaborated in detail appears very applicable to the task in hand. The authors analyze five different mental functions in their patients viz., affectivity, attention, memory, association of ideas, general activity. Each of these is in turn subdivided, and suitable tests are devised for the examination of each. The results are expressed in figures, and thereby a graphic representation of the patient's mental condition at any given period is obtained.

DEMENTIA PRECOX AND THE THYMUS.

Ebbell[8] presents evidence which seems to demonstrate a connection between some primary anomaly or acquired disorder of the thymus and the development of clinical symptoms of the dementia precox type. The pathologic anatomic findings in dementia precox, he continues, seem to be identical with those found in animals after partial destruction or total removal of the thymus. This assumption of thymus insufficiency as the cause of dementia precox harmonizes with the observation of its hereditary nature and with the influence of acute infectious diseases and the abuse of alcohol. When the dementia precox develops in childhood there may be some congenital deformity of the thymus. Attempts to treat animals and human beings with thymus extract or in substance have given no results. This is but natural, Ebbell remarks, as an artificial chemical mixture or devitalized tissue is unable to do the work of the living thymus. Transplantation of thymus tissue seems the only encouraging prospect, and progress must be sought along this line, although Klose and Vogt have reported disappointing results in two dogs. Scraps of thymus tissue were implanted in the omentum and spleen of two thymectomized dogs, but were all absorbed in time.

THE REFLEXES IN DEMENTIA PRECOX.

Borel,[9] from an examination of twenty-three cases came to the following conclusions: (1) In two-thirds of the cases the tendon reflexes were exaggerated and the cutaneous reflexes diminished. (2) With the exception of Pilcz's sign, which was present in 78%, the oculo-pupillary reflexes were too inconstant to be of any value. (3) In 82% Leri's reflex was negative or asymmetrical. (4) Disturbances of the reflexes in dementia precox do not depend upon the clinical variety of the disease, but occur indifferently in every form of it, and do not appear to be affected by states of depression or of excitement. (5) Similar disturbances of the reflexes do not occur in mania or melancholia. (6) Disturbances of the reflexes in dementia precox seem to harmonize with the probability of the lesions being situated in the higher nerve centres, lesions which have been observed by numerous authors. (7) The presence of Pilcz's sign and the absence of Leri's reflex in association with the disturbances of the reflexes mentioned (*vide* 1.) may be of considerable value in the diagnosis of dementia precox.

GENERAL PARALYSIS AND PREGNANCY.

Lavergne[10] gives the histories of seventeen cases, three of which are original, and comes to the following conclusions: (1) Pregnancy is rare in general paralysis. (2) Pregnancy may occur at any stage of general paralysis, and appears to accelerate the course of the disease, and sometimes to aggravate the symptoms. (3) In rare cases there is improvement or disappearance of the symptoms. (4) Delivery is followed sometimes by aggravation of the disease, but usually by a transient remission. (5) Pregnancy as a rule goes on to full term. (6) Labor is very often painless, and is in most cases very rapid. (7) The infant is usually normal. (8) Abortions, premature births, or births of children with syphilitic symptoms or malformations are rare.

REFERENCES

[1] Singer's critique on Kraepelin's Dementia Precox in the eighth edition of his text-book.

[2] Journal A. M. A., May 30, 1914.

[3] The Present Status of the Application of the Abderhalden Dialysis Method to Psychiatry. A paper read at the 70th annual meeting of the American Medico-Psychological Society, May, 1914.

[4] Miller and Levy: Bull. Johns Hopkins Hosp., 1914, Vol. xxv, p. 133.

[5] Journal A. M. A., Dec. 12, 1914.

[6] Journal Nerv. and Ment. Dis., 1913, Vol. xl, November.

[7] L'Encephale, 1914, Vol. ix, Feb. 10, p. 101.

[8] Norsk Magazine for Laegenvidenskaben, Christiania, December, Vol. lxxv, No. 12.

[9] Thèses de Paris, 1913-14, No. 68.

[10] Thèses de Paris, 1913-14, No. 448.

(*Concluded next week.*)

◆

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

WORCESTER DISTRICT MEDICAL SOCIETY.

A regular meeting of the Worcester District Medical Society was held in G. A. R. Hall, Worcester, November 11, 1914, under the Chairmanship of DR. F. H. CLAPP. The meeting was well attended both by members and invited guests. The paper of the afternoon was read by DR. WALTER D. BIEBERBACH, the title being

THE STORY OF VENEREAL DISEASES.*

The report of the Committee on Control of Venereal Diseases was then presented by the chairman, DR. FREDERICK H. BAKER, who said:

Mr. President, Ladies and Gentlemen:

In accordance with instructions from the Society at its last meeting your committee has caused 350 circulars and reply cards to be mailed to the physicians of Worcester and to the physicians in the 46 towns represented in this Medical Society. From the 350 communications we received 143 replies, 107 from the city and 36 from the towns, *i.e.* about 40% replied.

The circular was as follows:

COMMITTEE ON CONTROL OF VENEREAL DISEASES.

October 31, 1914.

DEAR DOCTOR:

Syphilis and Gonorrhea are among the most common and dangerous of communicable diseases. Countless numbers are yearly being infected, innocently and otherwise, resulting in untold physical suffering and vast waste of money, both private and public.

Practically nothing has been done to control these diseases. For this reason, this committee desires to ascertain the prevalence of these diseases in our community, and to make a beginning in an effort to control them. We ask your earnest co-operation in this work.

To show briefly the enormity of this evil the following statistical evidence is given.

---

* See JOURNAL, page 201.

Syphilis infects about 5–10% of the adult population.
Syphilis causes about 20% of all insanity.
Syphilis causes about 10% of epilepsy.
Syphilis causes many of the idiotic and feeble-minded children.
Syphilis causes most cases of locomotor ataxia, many brain lesions and many spinal cord diseases.
Syphilis causes most early apoplexies and many late ones.
Syphilis causes very many cardio-renal diseases.
Syphilis is to be looked for in many "indefinite ailments."
Syphilis causes much infant mortality and many abortions.
It is the one *great hereditary disease.*
Gonorrhea causes more than 10% of blindness.
Gonorrhea causes a very large percentage of the pelvic operations upon women.
Gonorrhea causes about one-half of all cases of sterility.
Gonorrhea causes much joint disease and other septic conditions.
Practically all prostitutes are infected with one or both of these diseases.

Please fill out the enclosed question card and return before November 8th, 1914. The results of this inquiry will be presented at the next regular meeting of this Society to be held Wednesday, November 11th, 1914, at 4.15 p. m. in G. A. R. Hall, 55 Pearl St., Worcester, to which you, whether a member or not, are cordially invited.

Committee.

"A tabulation of the answers shows the following:

"*Question* 1. Mow many cases of Syphilis in any state do you know of? The total number reported in the City of Worcester was 1508, in the towns 188, making in all about 1700 cases.

"*Question* 2. How many cases of Gonorrhea in any stage do you know of? In Worcester, 984 and in the towns 256, a total of 1240 cases.

Question 3. Do you favor having the Worcester Board of Health do free Wassermann tests for syphilis and free tests for gonorrhea? In Worcester 93 answered "Yes', 4 answered 'No', 7 answered 'Yes' conditionally, and 3 passed this question. In the towns 35 answered 'Yes' and 1 'No'.

Question 4. Do you favor having the City Hospital establish a special service for the hospital and out-patient treatment of venereal diseases? In Worcester 81 answered 'Yes', 15 answered 'No', 7 answered 'Yes' conditionally, and 4 made no answer In the towns all 36 said 'Yes'.

Question 5. Do you favor making syphilis and gonorrhea reportable diseases either by name or number? In Worcester 60 answered 'Yes' without comment, 21 'Yes, by number', 1 'Yes' conditionally, 17 said 'No', 8 made no reply. Thus it is apparent that about 80% in Worcester are in favor of some method of reporting these diseases to the Board of Health. In the towns 14 answered 'Yes' without comment, 14 'Yes, by number', 1 'Yes' conditionally, 5 answered 'No' and 2 were undecided.

"These answers are certainly instructive and indicate clearly that the medical men of this city and county are in favor of attacking this venereal problem. While the figures on the number of cases of syphilis and gonorrhea are not definite,—in fact being far below the actual number, for if 40% of the physicians in Worcester report about 1500 of one and nearly 1000 of the other, the remaining 60% could doubtless report as many more, not to mention the great number treated by druggists, quacks, and by advertised remedies—enough have been reported to show the great prevalence of venereal disease in this community and to warrant an organized effort for their suppression.

"As to means for the medical control of these diseases it is evident from the answers that about 95% of the physicians responding favor such an aid to the early and definite diagnosis as would be afforded by a laboratory for free Wassermann tests for syphilis and tests for gonorrhea, and that they approve of the work being done by or under the direction of the Board of Health.

"Nearly as many, *i.e.* about 85%, are in favor of the City Hospital establishing a special service for the care of venereal diseases where those unable to pay for treatment privately might obtain proper care during the communicable stage of the diseases. It has been shown that two or three weeks' vigorous treatment will render an active syphilitic practically innocuous to others, while neglected, as is so often the case, it may remain active for months, endangering many.

"As noted above about 85% favor making the diseases reportable. This would enable the authorities to form a correct estimate of the prevalence and the economic and social influence of the disorders, as well as affording a means whereby the careless or viciously indifferent patient could be controlled.

"The information concerning the great prevalence of venereal diseases in our community furnished us by these question cards moves your committee to strongly recommend the following measures for the beginning of the work of attacking them in this city: (1) That the Board of Health establish a laboratory for the free testing for syphilis and gonorrhea. (This could be done for the present at little expense by effecting an arrangement with City Hospital where Wassermann tests have been done for nearly a year.) (2) That Worcester City Hospital establish a department of venereal diseases for both bed and out-patient treatment, the latter to be open one evening weekly. (3) That syphilis and gonorrhea be made reportable diseases —at present by number, as board of health records are now public property and open to inspection. (4) That the present status of the venereal diseases calls for education both of the medical profession and the adult lay population.

"Respectfully submitted by the Committee.

"Clara P. Fitzgerald, M.D.
"Michael F. Fallon, M.D.
"Howard W. Beal, M.D.
"Kendall Emerson, M.D.
"Frederick H. Baker, M.D."

In the discussion which followed Dr. Edw. H. Trowbridge, chairman of the Worcester board of health said that he could vouch for the readiness of all members of the board to advance any effort to control or limit venereal diseases in Worcester. He thought there might be considerable question as to the best method of attacking them. He also pointed out the need of instructing the young before they came to the age of opportunity, that it is better to prevent than to attack it after it is contracted. He spoke of the neglect of parents to fortify the minds of their boys and girls against these dangers before sending them away to school or college and intimated that it might be a proper function of the school physician to instruct in these matters.

DR. ERNEST V. SCRIBNER, superintendent of the Worcester State Hospital, said that the subject was of special interest to him as syphilis was so large a factor in filling our asylums, jails and almshouses. He believes in taking whatever measures promise mitigation of present conditions. At the State Hospital they have been taking Wassermanns for two years, sending the bloods to Harvard Medical School. For purposes of comparison they have sent bloods from 109 cases simultaneously to the Medical School and to Worcester City Hospital laboratory. Reports from the two places agreed in all save the following:

4 doubtful at H. M. S. were positive at C. H.
1 negative at H. M. S. was positive at C. H.
5 doubtful at H. M. S. were negative at C. H.

He therefore thinks it safe to infer that the work at the local laboratory is as reliable as at the other and in certain instances more accurate, the possibility of deterioration in transportation being less. He feels that the City should provide for free tests and that the Society can do no greater good than to assist the committee in the work.

REV. DR. VINCENT E. TOMLINSON, speaking for the pastors present, said that they appreciated the courtesy of the Society. The two professions have much in common, the physical and moral health of the community being interdependent. The initiative in a movement of this sort should come from the medical profession who are closer to the problems and well informed. He approves of letting in the light and is sure the churches will do what they can to help. He cited a case of an innocent death from one of these diseases.

Mr. Fred L. Willis, Secretary of the Worcester Y. M. C. A., said he was much impressed by the force of the problem. He told of how the Y. M. C. A., tried to meet it by lectures to adults and heart-to-heart talks to boys. The trouble is that boys and girls don't know what they are up against. He believes that they can be taught to control passions and that that is the basis of the control of the diseases, *i.e.* the upbuilding of moral character. Mr. Wilder, the physical director, has been doing it with thousands of boys. The Y. M. C. A. is ready to help.

DR. A. W. MARSH also emphasized the educational side of the problem, citing a sad case of an innocent infection from a supposedly cured case. He then offered a motion "That the Committee on the Control of Venereal Diseases confer with Worcester Board of Health and with the trustees of Worcester City Hospital to make arrangements with them, if possible, to carry out the recommendations reported by the committee, and furthermore that the committee be authorized by this Society to begin a campaign of education on this subject among adults."

The motion being seconded was unanimously passed by the Society. The Campaign of Education prescribed by that vote is now being organized after the following plan: To send from our ranks lecturers of authority and recognized conservatism of both sexes to speak before subordinate church organizations, parents' associations, lodges, civic organizations, etc., as we may be able to approach them. While these lectures are studiously to avoid the spectacular, it is our intention fully to expose to those having understanding, the spectre of venereal disease to the end that we may have the intelligent co-operation of the public in our program of medical control and of stimulating the inculcation of sound morality in the rising generation by parents, clergy and teachers. ERNEST L. HUNT, *Secretary.*

Book Reviews.

Annual Report of the Surgeon-General of the Public Health Service of the United States for the Fiscal Year 1914. Washington, D. C.: Government Printing Office. 1914.

This report by Dr. Rupert Blue, Surgeon-General of the United States Public Health Service, records the activities of that service for the fiscal year ended June 30, 1914. This is the forty third annual report of the service in the one hundred and sixteenth year of its existence. The principal topics dealt with are administrative organization, scientific research, maritime and domestic quarantine, sanitary reports and statistics, marine hospitals and relief, personnel, publications and needs of the service. Especial emphasis is laid on pollution of the Great Lakes and their tributary rivers as a serious menace to public health. About sixteen million passengers are carried annually in sixteen hundred vessels over these waters, which are used by them for drinking purposes. Dr. Blue believes that this fact has an important part in the maintenance of the relatively high typhoid fever rate of the United States and recommends that all water from the Great Lakes should be purified before being used for drinking. There is also great necessity for rural sanitation in the prophylaxis of typhoid. Attention is also called to the adverse report of the committee on the so-called Friedman treatment of tuberculosis, and to the investigation of Von Ruck's treatment now in progress. Among the needs of the service Dr. Blue notes the desirability of an increase in the number of its officers and of its clerical assistants; of an additional building for the use of the hygienic laboratory; and of appropriations for the collection of morbidity statistics and for the publications of the service. Three appendices contain a financial statement, statistical tables and a statement of surgical operations for the year.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. GLEASON, M.D., LL.D., Professor of Otology in the Medico-Chirurgical College; Aurist to the Medico-Chirurgical Hospital; Surgeon in charge of the Nose, Throat and Ear Department of the Northern Dispensary; formerly one of the Laryngologists of the Philadelphia Hospital. Illustrated. Third edition. Thoroughly revised. Philadelphia and London: W. B. Saunders and Company. 1914.

The second edition of this book was reviewed in the JOURNAL of May 18, 1911. This edition has been in many places revised to correspond with the progress of the last few years. It is not intended to be exhaustive, but to furnish a convenient text-book for students and practitioners. In most subjects it is clear, compact and conservative.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, FEBRUARY 11, 1915.

EDITORS.

ROBERT M. GREEN, M.D., *Editor-in-Chief.*
WALTER L. BURRAGE, M.D. } *For the Massachusetts Medical Society.*
FREDERICK T. LORD, M.D. }

COMMITTEE OF CONSULTING EDITORS.

WALTER B. CANNON, M.D.
HARVEY CUSHING, M.D.
DAVID L. EDSALL, M.D.
REID HUNT, M.D.
ROGER I. LEE, M.D.
ALLAN J. MCLAUGHLIN, M.D.
ROBERT B. OSGOOD, M.D.
MILTON J. ROSENAU, M.D.
EDWARD C. STREETER, M.D.
E. W. TAYLOR, M.D.

ADVISORY COMMITTEE.

EDWARD C. STREETER, M.D., Boston, *Chairman.*
WALTER P. BOWERS, M.D., Clinton.
HOMER GAGE, M.D., Worcester.
JOEL E. GOLDTHWAIT, M.D., Boston.
LYMAN A. JONES, M.D., North Adams.
HUGH WILLIAMS, M.D., Boston.
ALFRED WORCESTER, M.D., Waltham.
ROBERT B. OSGOOD, M.D., Boston, *Secretary.*

ERNEST GREGORY, *Manager.* W. M. LEONARD, *Consulting Manager.*

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

ACTION OF THE ASSOCIATION OF ANATOMISTS REGARDING COLLEGE WORK IN PREPARATION FOR HUMAN ANATOMY.

AT the meeting of the American Association of Anatomists held in Philadelphia in 1913, a committee consisting of Drs. H. McE. Knower, F. T. Lewis, and W. H. Lewis was appointed "for the purpose of standardizing the courses in biology required in premedical courses and leading to the study of anatomy." The American Society of Zoölogists was requested to coöperate in this matter, and promptly responded by appointing a committee, consisting of Profs. H. B. Ward, G. H. Parker, and C. E. McClung, "to confer with the committee from the American Association of Anatomists on the subject of premedical education." These committees have examined the published statements of courses and the many discussions of this subject, and have sought the opinions of representative members of both societies.

The committees agree that it is of the first importance to urge the selection of only thoroughly trained scientific men as teachers of the preparatory work. Such men can be trusted to insist on real scientific methods, and to select the best material and treatment to give the beginner a practical introduction and basis for further work. Beyond this point, however, the committees were unable to proceed. The Zoölogists suggested that the Anatomists should draw up a statement of what they desire the Zoölogists to do in preparing students for anatomy. After this had been done, the Zoölogists were ready to consider how far it is practicable to meet these needs. Accordingly the committee of the Anatomists presented such a statement to their Association at its recent meeting in St. Louis. It was unanimously adopted, and was referred to the joint committee for further action. The statement is as follows:

At the present time a one year's course in biology is generally required as a preparation for the work of the medical school. This study of biology must serve as a preparation for medical work in physiology, bacteriology and parasitology, as well as anatomy, and it may fairly be questioned whether a single college course is adequate for this purpose. The study of botany alone is obviously insufficient, and the domain of zoölogy is so vast that much care should be exercised in the choice of those phases of the science to be presented to young students. Courses which are primarily experimental and deal with the functions and reactions of animals, although excellent in preparation for the physiological work of the medical school, are not the proper basis for the study of human anatomy. It is the purpose of this report to point out only those features of the college preparation which experience has shown to be desirable, and in fact essential, for the successful study of gross and microscopic anatomy.

No uniform or stereotyped preparatory course is recommended, for it is recognized that every teacher should give special attention to those subjects and groups in which he is particularly interested, and to the knowledge of which he has contributed by his own researches. Success depends in large part upon the ability of the teacher, but the following purposes of instruction should not be forgotten if the preparatory work is to satisfy the requirements of anatomy.

1. Students frequently begin the study of human anatomy with an insufficient knowledge of the lower forms of animal life. The broad

knowledge of the various classes of animals and of invertebrate and lower-vertebrate morphology, which was the inspiration of the great anatomists of the past, is now too often replaced by vague considerations of the method of science and ideals of observation. A return to the study of animals, as objects of interest in themselves, apart from theoretical considerations and possible relations to human society, is therefore recommended. The student should obtain a synoptic knowledge of the animal kingdom, and should be able to classify in a general way and to describe the life histories of the common forms of animals, aquatic and terrestrial, which may be collected in his locality. A beginning in such work may well be made by the student independently, or perhaps in high-school courses, but such fragmentary and elementary studies should be supplemented by a thorough college course. The first-hand familiarity with animals should serve as the basis for all further work.

2. As a result of the knowledge of genera and species which the student should have obtained directly for himself by studying some group of animals or plants, questions of the origin of species and of the relation of the great classes of animals to one another, are inevitably before him as philosophical problems. Collateral reading then becomes as necessary for the biologist as for the man of learning in any other branch of knowledge. Selected works of Lamarck, Darwin, Huxley, Mendel and others, should be freely consulted. This literature, which in its influence upon human thought has far outspread the bounds of biology, should not be neglected by the students of zoölogy, whose particular heritage it is. Since the idea that science cannot be read, and that there is no knowledge in books, is often taught as a cardinal principle, it has come about that students of zoölogy have little knowledge of, or respect for, the writings of the makers of their science.

3. Before beginning the study of human histology, every student may reasonably be expected to be familiar with the use of the microscope and with the simpler methods of preparing specimens for microscopic examination. This technic can be learned in connection with various courses, perhaps the most useful of which is a general study of the cell with a comparative study of the elementary tissues. The maturation of the germ cells and the processes of fertilization and segmentation cannot be properly presented in the medical curriculum, and these fundamental biologic phenomena should therefore be observed in college courses. The development of the chick, which was studied primarily by physicians to explain the growth of the human embryo, can likewise receive little attention in the medical school. These subjects are all very desirable in themselves, and if studied by laboratory methods, will supply the requisite skill in the use of the microscope.

4. In preparing for human dissection, comparative anatomy should be studied with the same standards of thoroughness which obtain in the dissecting room. The student should learn to dissect rapidly and well, and to record with careful drawings and brief descriptions the forms and relations of the structures which he has disclosed. But such studies are not useful merely for their methods. A knowledge of comparative anatomy, including especially the anatomy of the lower vertebrates, is indispensable for understanding the structure of the human body. For other reasons also, human anatomy must be treated as an advanced study. The State does not provide bodies for dissection in order that untrained students may learn from them those elementary facts which may be understood equally well by dissecting cats or rabbits. "It is absurd," says President Eliot, "to begin with the human body the practice of dissection." And the value of dissection is so great in relation both to medicine and surgery, that an adequate preparation should be required. For the study of anatomy, in the words of Lord Macaulay, "is not a mere question of science; it is not the unprofitable exercise of an ingenious mind; it is a question between health and sickness, between ease and torment, between life and death."

5. Finally, these recommendations may be summarized as a plea for a more thorough study of zoölogy on the part of those planning to enter the medical schools. The zoölogical courses should not be abridged and popularized in order that time may be saved for other pursuits, or that the science may seem more attractive to college youth. Courses in anatomy and physiology which duplicate the work of the medical school, and courses in "medical zoölogy" ought not to be substituted for the strictly zoölogical university courses. The science of zoölogy is of such great service to students of medicine that it deserves a large place in their undergraduate studies. With medical anatomy, it constitutes

"a subject essentially one and indivisible"; and the penalty for its neglect is inadequate preparation for medical practice.

◆

REORGANIZATION OF THE BOSTON BOARD OF HEALTH.

The proposed reorganization of the Boston Board of Health, after a long period of discussion, was finally effected, in its legislative aspects, at a meeting of the Boston City Council on January 30. The change had been opposed by certain political interests but was advocated by the Mayor, the corporation council and numerous physicians. At various of the preliminary hearings, also, had been read letters approving the reorganization from the Norfolk and Suffolk Districts of the Massachusetts Medical Society, the Boston Milk and Baby Hygiene Association and the Boston Association for the Relief and Control of Tuberculosis.

The reorganization actually effected consists in the replacement of the present health commission of three members by a single health commissioner who will control seven administrative departments in place of the nine now in existence. Under him there will probably be two deputy commissioners, each of whom will have charge of one of the departments. These deputies are to be appointed by the health commissioner. The seven divisions are to be denominated as follows: medical, sanitary, food inspection, quarantine, laboratory and child hygiene divisions, and a division representing a consolidation of the clerical divisions, so that vital statistics work will be included. This eliminates the present divisions of communicable diseases, disinfection, dairy inspection, and inspection of milk and vinegar.

This reorganization is based on a principle similar to that underlying the recent reorganization of the Massachusetts State Board of Health,—the principle of administration by a highly paid, responsible expert controlling an efficient system of graduated subordinates. It is needless to say that this reorganization of the municipal health board, like that of the state health board, is a cause of gratification to the medical profession. The older forms of health board organization were adequate in their time, but have become incompatible with modern conditions, which require more highly specialized methods of action.

Boards of health first came into being as committees of safety to meet emergencies when epidemic diseases broke out. By natural evolution, these committees became permanent and developed into our present boards of health. It is quite as unwise to manage the health affairs of a large community by a board of health, as it would be to place the command of an army in the hands of a board of generals.

The Boston Board of Health has had a long and honorable record. The changes now effected in the health organization of the city are not on account of criticism of the work of the board, but because boards of health, as such, are relics of the past and have outgrown their usefulness. Economically, a board of health is wasteful, for there are several salaries to pay instead of one. From the standpoint of efficiency, a board is clumsy and makes for divided authority. Most large cities have long ago established their health organization upon modern lines, headed by a commissioner of health. In this way authority and responsibility are centered in one trained official and business is facilitated. The commissioner of health should be the administrative officer and be held responsible for the execution of the health laws and ordinances. He should have an advisory council, public health council, or board of health; such board or council, however, to have no administrative functions, but to be purely advisory, with semi-legislative and quasi-judicial powers.

With the reorganization of the Boston Health Commission thus accomplished in legislation, it remains that a highly efficient and competent expert should be judiciously selected to fill the important office of health commissioner. This selection should be made purely on the basis of merit without regard to political or other considerations.

◆

PROSTITUTION AND VENEREAL DISEASE.

In another column of this issue of the Journal, Dr. Walter D. Bieberbach reviews the perennial problem of prostitution, venereal diseases, and their prophylaxis. It might seem that there were little new to be said on this inscrutable question, yet Dr. Bieberbach interestingly recapitulates its history, and stimulatively criticizes some of the solutions of it which have been proposed. Venereal diseases he rightly assumes to be a manifestation of prostitution. For the benefit of humanity their control is earnestly to be desired. Yet any measure must be regarded as purely palliative which does not aim at removal of the cause. Doubtless palliative measures are often temporarily advantageous, but they should not be considered ultimate.

Prostitution, as a phenomenon of modern life, represents a reversion to the primitive physiologic condition of sex promiscuity. Early in its evolutionary experience the human race discovered, unconsciously, that such promiscuity is inconsistent with the higher interests with which it was becoming concerned. It therefore established marriage as a substitute. Under good conditions this substitute is effective; but unfortunately conditions are seldom universally good. As a matter of fact, civilization in its progress provides numerous economic and other deterrents from marriage, particularly among the young, with the natural result that in many cases prostitution recurs to afford satisfaction for the biologic instinct.

The real and ultimate remedy for prostitution and venereal disease is the removal of the causes from which they spring. Of these we have mentioned but one. No single measure of control or prevention is going to solve this archaic problem overnight; but perhaps it may fairly be considered that the civilization which shall succeed in improving the conditions surrounding marriage, and in encouraging and making possible early marriage among the young, instead of discouraging and tempting away from it, will have gone far towards the eradication of prostitution, venereal disease, and all their attendant evils.

◆

MASSACHUSETTS STATE HEALTH DEPARTMENT.

With the advice and consent of the advisory council, Dr. Allan J. McLaughlin, Massachusetts State Commissioner of Health, has completed the organization of his administration by the following nominations, which have been approved by the Governor and the Executive Council. These appointments are as follows: Dr. Milton J. Rosenau, pathologist; Dr. Eugene R. Kelly, of Seattle, Wash., director of communicable diseases; I. H. Goodnough, chief engineer, director of the division of sanitary engineering; H. W. Clark, chemist, director of the division of water and sewerage laboratories; William C. Hanson, director of the division of record and accounts; Hermann C. Lythgoe, director of the division of food and drugs.

From the medical point of view these appointments are cordially to be approved. The appointment of Dr. Rosenau to this position has necessitated his resignation as a member of the recently organized public health council, but it is felt that his services will be of greater importance to the community in the former than in the latter position.

One of the deficiencies which has already appeared in the structure of the act establishing the new department of health is the failure to provide penalties for violation of its regulations. A bill to remedy this defect has been introduced before the General Court providing a maximum fine of $300 for violation of regulations made by the department. On Feb. 2 this bill was discussed in committee, where it was advocated by Dr. McLaughlin, Dr. Enos H. Bigelow, Dr. Walter P. Bowers and Dr. A. K. Stone, and opposed by the representative of the Massachusetts State Grange. It is obviously desirable that this piece of legislation should be passed.

◆

MISCELLANEOUS MATTERS OF MEDICAL LEGISLATION.

Several miscellaneous matters of medical legislation are at present pending or have been recently dealt with in national and state legislatures. At Washington, on January 28, Congress defeated a bill to increase, by about $46,000, certain salary allowances in the United States Public Health Service. It was pointed out in the discussion of this measure that in times of peace this service is even more arduous and dangerous than that of the army and navy medical service, and that its members therefore deserve correlative compensation. Attention was called to the casualties suffered by the officers of the public health service within recent years.

"Five of the officers of this service within recent years have contracted tropical dysentery while in line of duty. In the Revenue Cutter Service an assistant surgeon on board one of the revenue cutters in Alaskan waters was drowned while seeking to afford medical relief to a lighthouse keeper. One died because he was infected with spotted fever while seeking to bring relief to the people of Montana. Within a period of five years four officers contracted typhoid fever in line of duty and two of them died from that disease. Eleven officers have contracted tuberculosis in line of duty and three of them died from this disease. Twenty officers have contracted yellow fever in line of duty and six of them died of this disease. It is a hazardous service; more hazardous than the Army or Medical Corps in times of peace, and because of the exposure to which these officers are subjected in cases of epidemic and in treating contagious diseases these men should have the same consideration that corresponding officers should have in the army and in the navy."

Comment was also made on the work of the Public Health Service in studying and dealing with malaria, yellow fever, trachoma, uncinariasis and small-pox. In spite of the merits of the bill, however, it was unfortunately defeated, largely through considerations of economy.

Another disappointment in medical legislation was the recent vetoing by Secretary Bryan of a plan for the purchase of a modern vessel for the United States Navy to replace the hospital ship *Solace*. It had been announced that the sum of approximately $2,000,000 was available for the purchase and equipment of such a ship. Of the need of a new hospital ship there can be no question since the *Solace* is an antiquated vessel of only 3300 tons. Even in the small Mexican War of last April the United States naval forces suffered from the inadequate hospital facilities. A suitable steamship of the Ward Line had even been selected, and Dr. Theodore W. Richards, U.S.N., detained to superintend her conversion into a hospital ship. The reason alleged by the Secretary of State for inhibiting this undertaking is fear lest other nations might consider that the United States was thereby preparing for war.

Several minor matters of medical legislation have been under consideration before committees of the Massachusetts General Court during the past week. Before the committee on social welfare, Dr. David Snedden, commissioner of education, advocated the establishment of special schools for children with defective eyesight. Another bill provided an appropriation of $2500 for making an investigation into the care and relief of the blind not now provided for. Chief Justice Bolster of the Boston Municipal Court advocated a bill authorizing the court to secure medical service for its criminal business at a cost of not more than $6000 annually. The committee favorably reported this bill and the bill authorizing the Massachusetts Commission for the Blind to establish defective eyesight classes and make an investigation with respect to persons with defective eyesight.

Before the committee on public health Dr. Marion C. Burroughs advocated a bill requiring the removal of noxious weeds from the roadsides in Massachusetts twice a year as a preventive of hay fever. The committee voted to report a resolve to have the state department of health investigate the subject and report to the next legislature. The committee reported adversely on a bill to provide better sanitary conditions in public toilet rooms.

◆

MEDICAL NOTES.

National Radium Institute.—Report from Washington, D.C., states that on Jan. 27 the sum of 171 milligrams of radium bromide, valued at over $11,000 was placed by the United States Government in the hands of Dr. Howard E. Kelly, Baltimore, for use at the National Radium Institute. This radium was extracted from the original ore in Colorado by a new and simplified process developed in the laboratory of the Federal Bureau of Mines at Denver.

Medical Bequest.—The will of the late Mrs. Eliza McMillan, filed in the probate court at St. Louis, Mo., on Jan. 25, creates a trust fund based on a contingent bequest of over $1,000,000 for the ultimate establishment of a hospital in connection with Washington University, to be known as the McMillan Eye, Ear, Nose and Throat Hospital. This hospital may be established as a separate department of Washington University, or may be administered under the direction of the medical department of the school. The bequest is contingent upon the death of the testatrix's only son without issue.

Insanity in New York.—The report of the State Hospital Commission of New York submitted last week to the general assembly at Albany, shows that during the year 1914 6,289 new cases were sent as patients to public hospitals for the insane in that state. During the same period 1677 former patients were re-admitted to these institutions. The total number of insane in the State of New York dependent upon state care is now 33,357, and the annual cost of their maintenance is $6,729,126.

European War Notes.—A piece of correspondence from the Associated Press dated at London on Jan. 3, and published in the *New York Times* on Jan. 31, indicates a serious shortage of physicians in Great Britain:—

"So serious is the impending shortage that the Royal Army Medical Corps is advising medical students who volunteered for hospital service to return to their schools, on the ground that it is their duty to qualify for their degree as soon as possible.

"Previous to the war the National Insurance act had relieved the profession of overcrowding by absorbing a large number of physicians to inspect and look after insured workers. War has since drawn away so many from home practice that civilian doctors are now scarce, overworked, and high-priced.

"Death has been busy among the Medical Corps men at the front no less than among the line officers. As a result, it is now proposed to take the doctors out of the trenches, leaving the first-aid work to the ordinary Hospital Corps men. The wounded may then be taken to the rear for further treatment."

On Feb. 5 the total of the New York Belgian relief fund amounted to $896,670.79; the New York Red Cross fund to $450,689.26; the American Ambulance Hospital fund to $322,257.85; the Prince of Wales relief fund to $107,846.63; the Committee of Mercy fund to $100,746.91; the French relief fund to $57,522.34; and the American Polish relief fund to $18,741.52.

On Feb. 6 the total of the New England Belgian relief fund amounted to $193,399.96; the Massachusetts Red Cross fund to $108,573,42; the Boston branch of the American Ambulance Hospital fund to $52,976.45; the Boston Jewish relief fund to $32,011.92; the American St. George fund to $19,892,86; the Boston Polish relief fund to $17,657.38; and the Lithuanian national relief fund to $10,184.24.

Epizoötic of Foot and Mouth Disease.—On Jan. 26 the sum of $2,500,000 became available, through President Wilson's signature of an urgent deficiency appropriation bill, to reimburse farmers for the loss of their cattle slaughtered by Government orders during the recent epidemic of foot and mouth disease. In Illinois the sum of $600,000 will be paid for 36,758 animals killed. The total number killed in Pennsylvania was 17,896 and in Ohio 10,111. The total number killed in all states up to Jan. 1 was 101,111, including 46,268 cattle and 47,735 swine. The total cost of the epizoötic to the Government thus far has been $2,129,138.

On Jan. 27 a few new cases of the disease were found in the Union Stock Yards at Chicago, which have been again disinfected. By a new Federal ordinance effective on Feb. 1, no liable live stock susceptible to foot and mouth disease may be shipped from points within any of the quarantine area to points in a free area. This order affects territory in Delaware, Illinois, Indiana, Maryland, Michigan, Montana, New York, Pennsylvania, Virginia and Wisconsin. On Feb. 1 also four counties in Kansas,—Butler, Cowley, Sedgwick and Sumner,—were quarantined against foot and mouth disease by the United States Department of Agriculture on account of infection brought by cattle from Wisconsin. On Feb. 2 the quarantine in Maine and Vermont was virtually raised by an order permitting cattle from these states to be brought to Massachusetts for immediate slaughter at establishments under federal inspecion. On Feb. 3 two new cases of the disease were discovered at Springfield, Mass.

BOSTON AND NEW ENGLAND.

Social Hygiene.—On Jan. 29 Dr. Hugh Cabot spoke at the January meeting of the Longfellow Home and School Association in Roslindale, Mass., on "Social Hygiene as the Result of an Educated Public Opinion."

Fire at Tewksbury Hospital.—On Jan. 30 a fire in one of the storage buildings of the State Infirmary at Tewksbury, Mass., destroyed property to the value of $2000 and necessitated the removal of three hundred patients to other quarters.

Epizoötic of Hog Cholera.—Report from North Grafton, Mass., on Jan. 31, states that an outbreak of hog cholera has occurred in that town, and 88 infected pigs have been slaughtered.

Massachusetts Association of Boards of Health.—At the recent annual meeting of the Massachusetts Association of Boards of Health held in Boston, addresses were made by Dr. Lewis Chargin of the New York Department of Health, Dr. F. H. Baker of the Worcester Board of Health and Mr. Michael M. Davis, Superintendent of the Boston Dispensary. The following officers were elected for the ensuing year:—

Prof. Milton J. Rosenau, Harvard Medical School, president; Prof. George C. Whipple, Harvard University, first vice-president; Dr. A. L. Jones, North Adams, second vice-president; Dr. F. H. Slack, secretary; Dr. F. G. Curtis, Newton, treasurer. New members of the executive committee: Dr. A. S. McKnight, Dr. F. X. Mahoney, Dr. F. H. Thompson, R. L. Newcomb, and Dr. F. G. Wheatley.

Transfer of Boston Quarantine Station.—At the organization meeting of the new city council of Boston on Feb. 1, Mayor Curley reintroduced the proposed ordinance for transferring the Boston Quarantine Station from local to federal control. On Feb. 3 it was stated that the Committee of the Chamber of Commerce has voted to reverse its previous decision and to approve the transfer.

Notifiable Diseases in Massachusetts.—On Dec. 15, 1914, the following diseases were declared by the State Department of Health to be *Dangerous to the Public Health* and so reportable by law. Householders and physicians must now give immediate notice to the local board of health of all cases of:—

Actinomycosis.
Anterior poliomyelitis.
Anthrax.
Asiatic cholera.
Cerebro-spinal meningitis.
Chickenpox.
Diphtheria.
Dog-bite (requiring anti-rabic treatment).
Dysentery:
  a. Amebic.
  b. Bacillary.
German measles.
Glanders.
Hookworm disease.
Infectious diseases of the eye:
  a. Ophthalmia neonatorum.
  b. Suppurative conjunctivitis.
  c. Trachoma.
Leprosy.
Malaria.
Measles.
Mumps.
Pellagra.
Plague.
Rabies.
Scarlet fever.
Septic sore throat.
Smallpox.
Tetanus.
Trichinosis.
Tuberculosis (all forms).
Typhoid fever.
Typhus fever.
Whooping cough.
Yellow fever.

Attention is called to the fact that in accordance with the provisions of Chapter 670 of the Acts of 1913, notice of cases of any disease declared by the State Department of Health to be dangerous to the public health shall be given in such manner as the State Department of Health may deem advisable. On Dec. 15 it was voted that such notice shall be given by physicians on postal cards supplied to physicians by the local board of health with the complete list of such diseases printed thereon for their information.

Hospital Bequests.—The will of the late Mrs. Joel Goldthwait, who died in Boston recently, contains a bequest of $50,000 to the Robert Bent Brigham Hospital for Incurables, to constitute a fund to be known as the Joel and Ellen Goldthwait research fund, the income to be used for investigation to increase the knowledge of chronic diseases. Additions of $10,000 have already been made to this fund. The will also contains bequests of $1000 each to the Sharon Sanatorium, the Children's Island Sanatorium at Marblehead, and the Noble Hospital at Westfield, Mass.

Baldwinsville Hospital Cottages.—The recently published thirty-second annual report of the corporation of the Baldwinsville (Mass.) Hospital Cottages records the work of that institution for the past year. There has been an average of 105 patients.

"Thirty-one patients were dismissed during the year—twenty-one boys and ten girls. Seven recovered or the disease was arrested; fifteen were much improved; seven showed slight improvement; only one went away in the same state of health as when he entered, and one died. The entire number of cases treated within the year was 134. The Boston committee, Miss Edith H. Sears, chairman, has received funds for the support of eight beds for the entire year and one for nine months. The Woman's Board contributed $1699.78 toward the schools, free beds and general expenses, which included new boiler-room and additional water-supply equipment."

Ring Sanatorium.—The recently published tenth annual report of the Arlington (Mass.) Health Resort records the work of this institution and of the thirty-fifth year of the Ring Sanatorium during the past year. During the year ended June 1, 1914, 171 patients were under treatment and five pupils were graduated from the Training School.

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending Feb. 2, 1915: Diphtheria, 52, of which 1 was non-resident; scarlatina, 56, of which 2 were non-resident; typhoid fever, 4; measles, 77; tuberculosis, 40, of which 1 was non-resident. The death-rate of the reported deaths for the week was 15.99.

Current Literature

Medical Record.

January 16, 1915.

1. Peterkin, G. S. *Scientific Knowledge Logically Applied to Acute Gonorrhea in the Male Urethra.*
2. Head, J. *Vaccines in Relation to Mouth Infections.*
3. McSweeny, E. S. *Are We Getting Proper Value from Our Plant and Expenditure for the Tuberculous?*
4. DeRoulet, A. *The Occupational Factor in Diseases of Women.*
5. Hagemann, J. A. *Some Ocular Manifestations of Aural Disturbances and Their Interpretation.*
6. Weinstein, J. *A Clinical Report of the Successful Use of Emetine in the Control of Hemorrhage Following Nasopharyngeal Operations.*
7. Romeo, P. *The Romeo Three-bladed Uterine Curette.*

January 23, 1915.

1. Fischer, C. S. *The Sympathetic Nervous System and the Gastro-Enteric Functions.*
2. Fuller, E. *Surgery of the Seminal Vesicles: Remarks in Reply to Criticisms.*
3. Morris, R. T. *What Do We Mean by "The Unfit"?*
4. von Ruck, S. H. *Prophylactic and Therapeutic Immunization Against Tuberculosis; Its Possibilities and Limitations.*
5. Lewisohn, R. *A New and Greatly Simplified Method of Blood Transfusion.*
6. Dickey, W. A. *Myocardial Changes Following the Acute Infectious Fevers.*
7. Johns, M. W. *Modern Roentgen Technic in the Treatment of Malignant Conditions.*
8. Junor, K. F. *Twilight Sleep in the Home.*
9. Coleman, J. *Nasal Tuberculosis.*

The Journal of the American Medical Association.

January 23, 1915.

1. *Holt, L. E., and Babbitt, E. C. *Institutional Mortality of the New Born: A Report on Ten Thousand Consecutive Births at the Sloane Maternity Hospital.*

2. *COUGHLIN, W. T. *Sarcoma of the Tongue: A Study of the Published Cases, with Reports of Two New Cases.*
3. KOLL, I. S. *The Experimental Effect of the Colon Bacillus on the Kidney.*
4. NEILL, W., JR. *Exposure of Appendix by Cullen's Method. A Simple Way of Removing an Adherent Retrocecal Appendix Through the Ordinary Gridiron Incision.*
5. *KAHN, H., AND GORDON, L. E. *The Use of Pituitary Extract as a Coagulant in the Surgery of the Nose and Throat.*
6. EMERSON, L. *Operations for Clefts of the Hard and Soft Palate.*
7. THOMAS, H. B. *So-Called Congenital Scoliosis with Specimen, Including the Thorax.*
8. *PECKHAM, F. F. *Fracture of Both Bones of the Leg.*
9. MACAUSLAND, W. R. *Ankylosis of the Elbow, with Report of Four Cases Treated by Arthroplasty.*
10. COTTON, F. J. *A New Type of Ankle Fracture.*
11. TIMME, W. *The Automatic Reciprocal Activities of Brain and Viscera.*
12. FISCHER, M. H. *Relation Between Chlorid Retention, Edema and "Acidosis."*
13. LEVISON, L. G. *The Occurrence of Edema from Large Doses of Sodium Bicarbonate.*
14. CASSELMAN, A. J. *Unheated Vaccines.*
15. ARNOLD, H. D. *The Problems of Graduate Medical Instruction.*
16. *CURTIS, G. H. *The Treatment of Hemorrhage by Injection of Blood.*
17. JONES, L. W. *Double Detachment of the Retina as a Sequence to Nephritis.*
18. KINNEAR, T. J. *Intra-Urethral Breakage of Vacuum Electrode.*
19. CULVER, G. D. *An Instance of Pulmonary Syphilis Closely Simulating Tuberculosis.*

1. Holt and Babbitt's interesting analysis brings out the following points of practical interest in 10,000 cases: The deaths in the hospital during the first 14 days were 8% of the living births. For half this number prematurity was responsible; 48% of the total deaths and 66% of those due to prematurity occurred on the first day. Congenital weakness and atelectasis together made up 58% of the total deaths. The mortality from conditions intimately connected with delivery—accidents of labor, hemorrhage, sepsis and asphyxia—together made up but 20% of the deaths of the first 14 days. Malformations and congenital diseases other than syphilis caused 4% and syphilis 4%. The only important disease developing after birth was pneumonia. Stillbirths must be reckoned as one of the large problems in infant mortality; they are one and a half times as many as the deaths from all causes during the first two weeks. Except for the larger rôle played by syphilis, the causes of stillbirths differ in no way from those which produce death during the first days of life. The number of deaths from congenital weakness can be reduced only by care of the mother during her pregnancy. The number of stillbirths and deaths from causes connected with parturition can be largely reduced by good obstetrics.

2. Coughlin finds that 4.9% of all cases of sarcoma of the tongue are congenital. Of the non-congenital, 3.2% were found in children under one year of age. No cases are reported between the ages of four and fourteen years; 11.7% occur between 10 and 20 years or 19.6% occur in patients under 20 years. The disease is hence not more common in the earlier years of life. The largest number comes in the fourth decade or 27.4%. Males predominate, the disease occurring nearly twice as frequently in males as in females. In at last 16% a history of previous injury was obtained and may be a causative factor. The right side and near the base seems to be the most common situation. The round cell type predominates. The article is a good one.

5. These authors find that the hemorrhage following nasal and throat operations is much reduced, especially in operations on the turbinates, by the hypodermic administration of pituitary extract, which materially reduces the coagulation time of blood. Blood pressure was increased in 61% and decreased in 39% of cases.

8. Peckham shows how a simple traction apparatus will often accomplish perfect reduction of a fracture of both bones of the lower leg without open operation. The method is certainly worthy of trial before operation is considered.

16. Curtis believes that subcutaneous injection of whole human blood in repeated doses in practically all hemorrhagic conditions is equally as valuable as transfusion. [E. H. R.]

JANUARY 30, 1915.

1. *RUBINOW, J. M. *Social Insurance and the Medical Profession.*
2. WHEELER, H. L. *A Method of Obtaining Dental Service in Hospitals by the Appointment of Internes.*
3. ALLISON, N., AND BOWLES, B. *Ankylosis: An Experimental Study.*
4. *NEWELL, F. S. *The Blood Pressure During Pregnancy, Based on Observations on Four Hundred and Fifty Cases from the Records of the Committee in Charge of Prenatal Work Carried on by the Woman's Municipal League of Boston.*
5. POLLOCK, L. J. *Hypopituitarism in Chronic Hydrocephalus.*
6. FARRELL, B. P. *Hills' Osteoplastic Operation for Pott's Disease. A Report of Clinical Observations with Results in One Hundred and Fifty-Eight Cases and Interpretation of Experimental Studies in Animals.*
7. JACOBS, C. M. *Observations on Bone Transplantation (Albee Method) for the Cure of Tuberculous Spine Disease.*
8. SUTTON, R. L. *The Symptomatology and Treatment of Seborrheic Keratosis.*
9. HORSLEY, J. S. *Transplantation of the Anterior Temporal Artery.*
10. LEWIS, D., AND GRULEE, C. G. *The Pylorus after Gastro-Enterostomy for Congenital Pyloric Stenosis. A Report on Its Condition Two Hundred and Fifty-Six Days Following the Operation.*
11. *BEEBE, S. P. *The Serum Treatment of Hyperthyroidism.*
12. EVANS, J. S., AND MIDDLETON, W. S. *Endamebic Pyorrhea and Its Complications. Preliminary Note.*
13. *WEIL, R. *Sodium Titrate in the Transfusion of Blood.*
14. ELOESSER, L. *Repair of Defects in Blood Vessels by Free Grafts of Fatty Tissue.*
15. QUAID, A. T. *The Need of Detailed Sputum Reports.*
16. DANFORTH, W. C. *Strangulated Epigastric Hernia.*
17. CADWALADER, W. B. *Progressive Lenticular Degeneration. Report of a Case with Necropsy.*
18. MCNEIL, H. L. *Syphilitic Ulcer of the Stomach. Report of a Case Examined Histologically.*
19. STIMSON, G. W. *Breakage and Removal of Eustachian Applicator.*
20. NELSON, A. *Prostatic Abscess Opened Through the Cysto-Urethroscope.*

1. Rubinow's article is very well stated, and of much interest to the profession. It should be read.

4. Newell's article is also one of much value. It shows the great value of repeated blood pressure examinations during pregnancy. Cases with a constant pressure of from 100 to 130, who did not show albumen, with one exception, had normal pregnancies and developed no signs of toxemia. Cases with pressure lower than 100 are apt to be in poor general condi-

tion and show shock at the time of labor. Those with pressure over 130 and in whom albumen appears are very liable to develop signs of toxemia.

11. Beebe makes a careful review of the whole subject of his antiserum for the treatment of hyperthyroidism, giving his theories as to its action, its preparation, and type of cases in which it is most suitable and the results. He considers 50% of 3000 patients cured in so far as they are able to meet the ordinary demands of life, 30% were somewhat benefited and 20% remained unrelieved.

13. Weil advocates the use of sodium citrate in proportions of 1 c.c. of a 10% solution in water to each 10 c.c. of blood, in transfusion. This avoids immediate clotting, and transference of blood can be made readily with a syringe in the hands of anyone without especial experience. [E. H. R.]

The Journal of Experimental Medicine.

December 1, 1914.

1. **Russell**, D. G. *The Effect of Gentian Violet on Protozoa and on Tissues Growing in Vitro, with Especial Reference to the Nucleus.*
2. **Walton**, A. J. *The Effect of Various Tissue Extracts upon the Growth of Adult Mammalian Cells in Vitro.*
3. **Nichols**, H. J. *Observations on Experimental Typhoid Infection of the Gall Bladder in the Rabbit.*
4. **Zinsser**, H., and **Dwyer**, J. G. *Proteotoxins (Anaphylatoxins) and Virulence.*
5. **Hitchings**, F. W. *A Method of Counting the Actual Number of Purkinje Cells Present in a Given Area of Cerebellum and Its Application in Ten Clinical Cases.*
6. ***Chickering**, H. T. *Agglutination Phenomena in Lobar Pneumonia.*
7. **Uhlenhuth**, E. *Cultivation of the Skin Epithelium of the Adult Frog, Rana Pipiens.*

6. Chickering studied the agglutinins in a series of cases of lobar pneumonia. No agglutinins were demonstrable in the blood of patients suffering from infection with the pneumococcus mucosus. In most severe and fatal cases of lobar pneumonia due to the other pneumococci, agglutinins could not be demonstrated. When the agglutinins were demonstrable they appeared usually about the time of the crisis and persisted from one day to several weeks. [R. I. L.]

January 1, 1915.

1. **Opie**, E. L., and **Alford**, L. B. *The Influence of Diet upon Necrosis Caused by Hepatic and Renal Poisons. Part I. Diet and the Hepatic Lesions of Chloroform, Phosphorus, or Alcohol.*
2. **Opie**, E. I., and **Alford**, L. B. *The Influence of Diet upon Necrosis Caused by Hepatic and Renal Poisons. Part II. Diet and the Nephritis Caused by Potassium Chromate, Uranium Nitrate or Chloroform.*
3. ***Petroff**, S. A. *A New and Rapid Method for the Isolation and Cultivation of Tubercle Bacilli Directly from the Sputum and Feces.*
4. ***Auer**, J. *The Functional Effect of Experimental Intraspinal Injections of Sera with and without Preservatives.*
5. **Lewis**, P. A., and **Margot**, A. G. *The Function of the Spleen in the Experimental Infection of Albino Mice with a Bacillus Tuberculosis.*
6. ***Flexner**, S., **Noguchi**, H., and **Amoss**, H. L. *Concerning Survival and Virulence of the Microorganism Cultivated from Poliomyelitic Tissues.*

3. Petroff describes a simple and rapid method for the cultivation of tubercle bacilli from the sputum and feces. The method depends largely upon addition of gentian violet to an egg-beef-juice medium. Positive cultures were uniformly obtained from all specimens of sputum, from all stages of tuberculosis. Positive cultures were occasionally obtained from sputum which had previously been positive for tubercle bacilli but were negative at that time by direct microscopic examination. The results from the feces were not so constant.

4. Auer discusses in an exhaustive fashion the intraspinal injection of sera and its dangers. He believes that the dangerous alterations of respiration and blood pressure are apparently largely due to increased intraspinal pressure rather than to the preservative drugs. He suggests that ether, which could be removed before injection, might well be a better preservative than chloroform or tricresol. As general precautions he advises that when intraspinal injections are given in human beings the operator should be prepared to withdraw part of the injected fluid and to administer artificial respiration.

6. Flexner, Noguchi and Amoss found that the minute microörganism cultivated from poliomyelitic tissues survives and maintains its pathogenicity in cultures for more than one year. [R. I. L.]

Correspondence.

PERSONAL AND SURGICAL CLEANLINESS.

Boston, January 21, 1915.

> "Beauty is Truth, Truth Beauty, that is all
> Ye know on earth and all ye need to know."

"It hardly seems necessary to impress upon intelligent people the importance of personal cleanliness, for with such it is a matter almost of instinct. There is in every civilized community an all too large proportion of individuals who never bathe and who regard a bath as a positive danger to health, as every physician who has had experience as a hospital interne or in practise among the ignorant poor can abundantly testify." (Harrington and Richardson, "Hygiene.")

Mr. Editor: Is personal hygiene the propaganda of sentimentalists or is there any scientific basis for keeping clean?

Almost the first and certainly one of the most striking arguments ever laid down for personal cleanliness is that of our own Dr. Oliver Wendell Holmes in his original contribution to the subject of puerperal fever.

The discovery of the germ theory of disease followed by antisepsis and then asepsis revolutionized medicine in the prevention through personal cleanliness of all types of sepsis. Is asepsis a matter for the operating room only? Is it not a valuable asset to the individual whose environment brings him continuously in contact with all kinds of disease? What is asepsis but the epitome of the doctrine of personal cleanliness? Hospital gangrene, infected wounds, and general infections originating therefrom, may be practically eliminated by rigid attention to one's personal cleanliness.

In the realm of every-day life it is an accepted fact that persons taking daily cold baths enjoy a virtual immunity from common colds. Is not this a strong argument for the use of water, especially when we consider the whole train of sequelae, in sinuses, ears, and respiratory tract which may follow a cold?

For the infant, bathing is more generally regarded as an essential factor to health. It is only the adult on whom a modicum of filth as a covering is considered innocuous. Pfaundler and Schlossman in "Diseases of Children" state categorically "The proper care of the skin is absolutely essential to healthy development. . . . Daily bathing is necessary from birth."

Dr. White in his little book on "The Care of the Skin" emphasies this still more strongly as the most important factor in preventing eczema in infants.

Hoffman states that "bathing is more nearly a panacea for human ills than any other known agent." Assuredly in the realm of skin diseases an ounce of prevention in the form of soap and water is worth a pound of cure. Impetigo, many forms of eczema, pediculosis, scabies, ringworm, tinea versicolor, sycosis, seborrhea and a host of others including acne and furunculosis are in the vast majority of cases prevented by rigid habits of cleanliness from birth. Dr. White again emphasizes the importance of cleanliness in writing of furunculosis: "Sterilize the skin by frequent warm baths in which plenty of soap is used, . . . cleaning the skin is all important in stout people. . . . Take particular care where the hair grows; wear clean clothes."

In the matter of baldness, next to the influence of heredity Dr. White calls attention to the need of frequent and thorough washing of the head from birth, rigid asepsis in the use of toilet articles, advocating strongly the carrying of one's own brush and comb to the barber's and making him observe personal cleanliness. The incidence of baldness in men may be largely due to infections conveyed from person to person through the medium of barbers.

Thompson, in his recent authoritative work on occupational diseases distributes printed slips to workmen such as the following:

"A full hot bath should be taken twice every week, soaking and soaping the body well. If the occupation has involved exposure to irritant dusts, vapors or fumes, the body should be sponged with warm water and well rubbed every night before going to bed. . . . Workers who are exposed to the fumes of molten metals should be afforded facilities for daily shower baths before going to their homes."

For the prevention of lead poisoning: Personal cleanliness must be had. Wash with warm water and soap daily—always before eating—and take at least one full hot bath a week."

Some of the other diseases largely controlled by personal hygiene are glanders, poisoning with antimony, arsenic, brass, chromium, copper, lead, mercury, platinum, silver, carbon, bisulphid, phosphorus, carbolic acid, hydrofluoric acid, picric acid, chinin, metol, nitroglycerine, paraffin, phenolhydrazin and tar.

Care of the teeth is nothing more than bodily cleanliness and our present growing knowledge of the dangers of general infection from dental foci adds one more argument to the importance of personal hygiene in preventive medicine.

If there is any rationality in promoting the activity of the skin as an excretory organ in such diseases as chronic nephritis, there must be some rationality in keeping one's skin clean even with healthy kidneys.

It is now known that "contact" infection plays a very much greater rôle than "air-borne" infection in spreading the bacterial diseases. We should, therefore, expect that personal hygiene would play an important part in prevention. On this point Rosenau writes: "Personal prophylaxis in tuberculosis consists in avoiding infection, obeying all the dictates of personal hygiene and living a clean normal and temperate life." He speaks of leprosy in much the same terms. Of cholera, he writes: "Personal prophylaxis first of all requires scrupulous cleanliness of the person and surroundings." Of dysentery: "There are two essentials, scrupulous cleanliness and boiling of water and cooking of all food." Of hookworm: "After all, prevention of hookworm disease is a question of decency and cleanliness." And so the list grows from year to year.

Sometimes individuals living in educated communities minimize the importance of personal hygiene because they are themselves healthy and yet omit many of the rules of hygiene from their lives. They do not remain well because dirt is healthy but because other individuals in their environment protect them through cleanliness from many of the transmissible diseases.

Sanitarians who used to say that thorough safe guarding of water supplies and food supplies was the most important factor in guarding the public health now say that education of the individual is the essential factor. Educate the individual to the idea of personal and public hygiene and the community diseases will be starved out. Overcrowding, dirt in tenements, poor food, are flagrant causes of diseases. Educate the individual to the ideals of personal cleanliness and our slums would vanish, for no person who is himself scrupulously clean will live or work in a filthy environment. The character of a person is known by the condition in which he keeps his house, his office or his workshop. Cleanliness is truly next to Godliness.

Very truly yours,
Hugh P. Greeley, M.D.

THE EMPLOYMENT OF NURSES SUSPENDED FROM TRAINING SCHOOLS.

Massachusetts General Hospital,
Boston, February 1, 1915.

Mr. Editor: May I call the attention of your readers to a bad condition that might be remedied with their assistance?

A few months ago a young woman called on me to ask to be reinstated in the training school, having left it ten years earlier. She wished to get her diploma so as to qualify for institution work. She said she left the school on account of illness at home and instead of returning to finish her course, had been doing private work successfully ever since. To strengthen her position she said she could give me references from our best known doctors who had employed her, even in their own homes; also that much of the time she had received the usual remuneration of the trained nurse. She said she had to ask the usual rates, otherwise her patients would have known she was not trained and would not have wanted her.

On looking up her record I found that she had been suspended at the end of six months in the hospital, and had never returned. I also found that her statement as to private work was true and that there were prominent doctors ready to endorse her.

Recently another woman who had been dismissed from the school twenty years ago after seven months in the school, called and said she had been private nursing successfully off and on ever since. Another undergraduate has been employed by the city in a graduate's position, no inquiry at the school having been made as to her credentials.

Many private nurses can tell of meeting such impostors on cases and in one instance that I know of the pupil had been dismissed for stealing. The graduate who met her on a case was persuaded not to betray her, and learned a lesson in ethics later, when some jewelry was missing in the home where they were both working on an equal footing.

Schools do not dismiss nurses without good reason, because it involves too much hardship for the hospital, if for no other consideration.

The nurses' uniform is not protected and consequently is no guarantee of graduation. Ought not doctors to know whether the nurses who work for them are really graduates or not? Ought patients to be deceived, and who is to protect them unless the doctor does? Hospitals where nurses should be under constant skilled supervision are the only safe places for partially trained nurses to practise.

If in six months a young woman of ordinary intelligence can learn enough to satisfy the physicians and if her services are worth $25 per week to the people who employ her, there seems to be no reason why the three year graduate should compete in that field. Personally I heartily approve of the trained attendant, although I should recommend a year's training and practise in elementary nursing methods, before permitting her to practise. I should like to see her registered as an R.A. (Registered Attendant) and do not doubt but that she would meet a long-felt need, but I do feel strongly that our work is too important to permit of a continued indifference to the present slip-shod methods of employing nurses.

Correspondence schools and some hospitals are making capital out of the reputation made by and the opportunities open to real trained nurses. Who ultimately suffers most by the indiscriminate flood of pseudo-nurses turned out on the public? The public itself, of course—it is getting poor service and paying dearly for it.

The reputation of trained nurses is being so bedragged that only a few schools can attract the best women, and graduates of the schools that do maintain high standards are shrinking more and more from private duty. The question is being asked, "Why should nurses care for private work?" There are still some physicians and many people who want the most skilled nursing they can get for their patients and these are the people who must help us in improving our nursing schools and in obtaining needed legislation.

Faithfully yours,
Sara E. Parsons, R.N.

AN EARLY INVESTIGATOR IN ANESTHESIA.

January 27, 1915.

Mr. Editor:

May I importune you to aid me through the columns of your valuable journal to secure some biographical data regarding Dr. E. R. Smilie, of 22 School Street, Boston, who in 1846, two weeks before Dr. Bigelow's epoch-making contribution on "Ether Anesthesia," in the Boston Medical and Surgical Journal, published an article on "The Use of the Ethereal Tincture of Opium for the Relief of Pain During Surgical Operations."

Dr. Smilie was later intimately associated with the pioneers who made anesthesia a practical adjunct of surgery, and the undersigned is anxious to secure all possible information regarding his life, personality and work.

Any pertinent communications will be gratefully acknowledged and duly credited in the effort to illuminate the rôle which Dr. Smilie played in the Historical Evolution of Anesthesia.

Respectfully yours,
F. H. McMechan,
1044 Wesley Ave., Editor: Quarterly Supplement of
Cincinnati, Ohio. *Anesthesia and Analgesia.*

[Note: The article by Dr. Smilie was a letter published in the issue of the Journal for Oct. 28, 1846, (Vol. xxxv, p. 263), and that by Dr. Bigelow in the issue for Nov. 18, 1846, (Vol. xxxv, p. 309). The latter has reference to Morton's first public administration of ether at the Massachusetts General Hospital on Oct. 16, 1846. Dr. Smilie's letter is of such interest, from its close connection with Morton's discovery, that we take pleasure in reproducing it in full.]

Insensibility Produced by the Inhalation of the Vapor of the Ethereal Solution of Opium.

To the Editors of the Boston Medical and Surgical Journal.

Sirs: As it is frequently found desirable to produce insensibility in persons requiring painful operations, I have made use of the ethereal solution of opium for that purpose, with excellent success, when reduced to vapor by gentle heat, varying the amount inhaled according to the length of time required for the operation; and from the entire absence of symptoms induced by pain, and those which usually result from the excessive use of opium, I have thought the method of preparation and exhibition invaluable in removing the dread in severe, and the minor operations of surgery. As a medicinal agent in cases of pulmonary irritation, it is beyond doubt the best vehicle for the introduction of opium into the system, and will, when fairly tested by experiment, I have no doubt, prove eminently successful, in a great variety of complaints requiring sedative treatment, from the power that it possesses for the instantaneous development of its effects, through the diffusible agency of the solution. The course which I have usually pursued in preparing the combination for inhalation, is by the introduction of the quantity of the cold ethereal solution of opium required by the urgency of the symptoms, into a glass retort, and by causing a slow evaporation with moderate heat, the patient being permitted to breathe the gaseous vapor from an elastic tube affixed to the mouth of the retort. The judgment of the physician is to be exercised with regard to the quantity inspired, which must be regulated according to the character of the disease and the duration of the required operation.

Yours, etc.,
E. R. Smilie.
22 School Street, Boston.

Miscellany.

PHILIPPINE CIVIL-SERVICE EXAMINATIONS.

Medical Inspector and Surgeon (Male), $3,000.—The United States Civil Service Commission announces an open competitive examination for medical inspector and surgeon, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Philippine Service, at a salary of $3,000 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of the position will be to take charge of the health station at Manila or in the Provinces, as the Philippine Director of Health may require, and to attend to such surgical work as may be assigned in the Philippine General Hospital, probably the best institution of its kind in the Eastern Hemisphere, with 350 beds and an equipment comparing favorably with that of any hospital in the world. The new conditions, and the as yet undescribed diseases, that are constantly encountered furnish a wide field to one interested in his profession. As a further aid to his work the Bureau of Science, which is on the hospital grounds, has one of the largest and most favorably known research laboratories in existence.

Specialist in Mental and Nervous Diseases (Male), $3,500.—The United States Civil Service Commission announces an open competitive examination for specialist in mental and nervous diseases, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Philippine Service at a salary of $3,500 a year, with subsistence, quarters, and laundry, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to organize and administer an insane asylum to be located on an estate of 600 acres, to exercise general supervision over the farm work, and to train a staff of nurses and attendants for this special work.

Bacteriologist and Pathologist (Male), $2,000 to $2,500.—The United States Civil Service Commission announces an open competitive examination for bacteriologist and pathologist for men only. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position, Bureau of Science, Manila, P. I., at salaries ranging from $2,000 to $2,500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to carry on research work in the laboratories of the Bureau of Science, combined with the regular routine bacteriological and pathological work.

These examinations are open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Forms B. I. A 2 and 2095, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, post office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; customhouse, New York, N.Y.; New Orleans, La.; Honolulu, Hawaii; or customhouse, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on March 2, 1915. The exact title of the examination as given at the head of this announcement should be stated in the application form.

BELGIAN PHYSICIANS' RELIEF FUND.

Weekly Report of the Executive Committee.

The committee of American physicians for the aid of the Belgian profession is constantly receiving heartrending reports regarding the distress of our Belgian colleagues and their families. Their plight is indeed a sad one. The urgency of the situation resembles that of a great conflagration. Promptness of action doubles and trebles its value. February will be a hard month in Belgium, with great suffering from severe weather added to their other trials.

Our English colleagues are fully awake to the situation. Though their number is small compared to that of America, they have contributed several thousand pounds to this cause. Arrangements have been perfected by which contributions are being promptly converted into supplies with every assurance that they will reach our destitute colleagues. Two hundred boxes of food have been purchased during the week ending January 30.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession for the Week Ending January 30.

CONTRIBUTIONS.

Dr. C. H. and W. J. Mayo, Rochester, Minn.	$100.00
Miss Margaret E. Reed, Chicago, Ill.	1.00
Dr. E. L. Neff, Pittsburg, Pa.	5.00
Dr. F. P. Sprague, Boston, Mass.	50.00
Dr. Caspar W. Miller, Wallingford, Pa.	50.00
Dr. John T. Bottomley, Boston, Mass.	25.00
Dr. Henry W. Frauenthal, New York, N. Y.	25.00
Dr. Edwin Sternberger, New York, N. Y.	10.00
Capt. W. A. Powell, M.C., U.S.A., Nogales, Ariz.	5.00
Dr. Frederick Fraley, Philadelphia, Pa.	10.00
Dr. George W. Ely, Pittsburg, Pa.	5.00
Dr. Samuel C. Plummer, Chicago, Ill.	5.00
Dr. R. W. Hodges, Baltic, Mich.	10.00
Dr. Ellen A. Stone, Providence, R. I.	10.00
Dr. Charles A. Elsberg, New York, N. Y.	25.00
Dr. F. M. Hicks, San Antonio, Tex.	10.00
Dr. Marion Marsh, Worcester, Mass.	2.00
Ohio Valley Acad. of Medicine, Bellevue, Pa.	25.00
Dr. M. P. Messinger, Oakfield, N. Y.	2.00

Total $375.00
Previously reported receipts.........$1791.00

Grand total $2166.00
Previously reported disbursement..$1650.00
Disbursements, week ending Jan. 30 440.00
Total disbursements $2090.00

Balance ....$ 76.00

F. F. Simpson, M.D., *Treasurer*.

ERRATUM.

Owing to accidental dropping out of a slug, which was not detected in reading the page proof, the title of an article by Dr. James M. Jackson, and Dr. W. D. Smith, was incompletely printed in the issue of the Journal of January 28. The title should have read: "Blood Picture Simulating Lymphatic Leukemia in Acute Infection after Removal of the Spleen." We exceedingly regret the occurrence of this accident and express our sincere apologies to the authors.

SOCIETY NOTICE.

The Harvey Society.—The eighth lecture of the series will be given at the New York Academy of Medicine, 17 West 43d Street, on Saturday evening, February 13, at 8.30 P.M., by Prof. John A. Fordyce, of Columbia University. Subject: "Some Problems in the Pathology of Syphilis."

RECENT DEATHS.

John Cunningham Clyde, D.D., M.D., who died on Janury 28 at Easton, Pa., was born in White Deer Valley, Pa., on October 22, 1841. After graduating from Lafayette College he served throughout the Civil War as a provost marshall under General Grant in Kentucky. He subsequently studied both medicine and theology and was finally ordained to the Presbyterian ministry. He was a member of various historic and scientific societies and the author of several religious and medical works.

Dr. Patrick T. McDonough, who died on February 4 at Woburn, Mass., was born on January 16, 1881. After engaging for a time in the practise of optometry he was appointed inspector of food and drugs for the Massachusetts State Board of Health. He was unmarried.

Dr. Samuel Wood Langmaid, M.D., died at his home in Brookline, Mass., February 3, 1915, aged 77 years. He was born in Boston June 26, 1837, was educated in the Roxbury Latin School and in Harvard College, graduating in the class of 1859, and was a graduate of the Harvard Medical School in 1864. He was a member of the American Laryngological Society and had held many appointments in the hospital of Boston as laryngologist. He was much interested in music and was an accomplished tenor singer himself, while he cared for the throat troubles of many of the musical profession. He is survived by his widow and two daughters.

BOOKS AND PAMPHLETS RECEIVED.

Infant Feeding, Its Principles and Practice, by F. L. Wachenheim, M.D. Lea & Febiger, Philadelphia, Pa. 1915.

Obstetrical Nursing, by Charles Sumner Bacon, M.D. Lea & Febiger, Philadelphia, Pa. 1915.

Fisk & Arnold
Established 1865
Oldest Manufacturers in New England of
ARTIFICIAL LIMBS

For Every Amputation.
United States Government Bonded Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates a limb for unjointed knee amputation, with toe, ankle, and knee articulation.

A full descriptive catalogue with important suggestions to the patient will be forwarded upon application.

3 Boylston Place, Boston, Mass.
Telephone, Oxford, 3684-M.

ELECTRIC CENTRIFUGES AND VACCINE SHAKERS

Send for Catalog C

INTERNATIONAL INSTRUMENT COMPANY
23 CHURCH STREET CAMBRIDGE, MASS.

INDEX TO ADVERTISEMENTS

Anheuser-Busch Co. 5
Armour & Co..............’.............. 16

Boston Laboratories........................ 10

Fisk & Arnold................Artificial Limbs 15
Fisk Hospital................Brookline, Mass. 13
For Sale.................................. 6
French Lick Springs..............Pluto Water 14

Harvard Dental School...................... 10
Harvard Medical School..................... 10
Hoffmann-La Roche Chemical Works........... 9
Hood's Milk................................ 8
H-O Oatmeal................................ 2

International Instrument Co................ 15

Jefferson Medical College of Philadelphia....... 10
Journal Talks to Advertisers............... 9

King's Puremalt Department................. 4

McKesson & Robbins......................... 15
Medical School of Maine........Bowdoin College 11
Medical Echo............................... 6
Medico-Chirurgical College of Philadelphia...... 10
Millet Tuberculosis Sanatorium............. 13
Mulford, H. K. Co.......................... 7

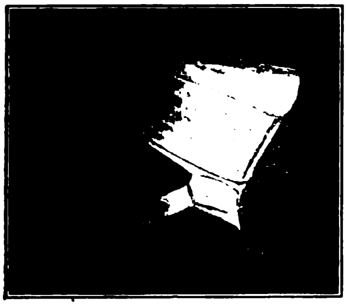
New York Eye and Ear Infirmary............. 11
New York Polyclinic Medical School......... 10
New York University........Medical Department 11
Notices 6
Nurses' Directory.......................... 11

Parke, Davis & Co.................Chemists 2
Pomeroy Company............................ 14
Professional Cards.....................12, 13

Saunders, W. B. Co.....................Books 1
Sharp & Dohme.......................Chemists 4
Sherman's Bacterins........................ 14
Squibb, E. R. & Sons....................... 6
Storm, Katherine L., M.D................... 15
Sundelius, Gustaf....................Masseur 11
Syracuse University........................ 10

Thomas, F. H. Co........................... 3
Tufts College Medical School............... 11

Wanted 6
Warren Chambers............................ 6



THE STORM BINDER AND ABDOMINAL SUPPORTER
(PATENTED)
Adapted to use of Men, Women Children and Babies

Modifications for Hernia, Relaxed Sacro-iliac Articulations, Floating Kidney, High and Low Operations, Ptosis, Obesity, Pregnancy, Pertussis, etc.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours

KATHERINE L. STORM, M.D., 1541 Diamond Street, **Philadelphia**

IMPORTANT ANNOUNCEMENT

LIQUID ALBOLENE

We regret to say that supplies of Russian oil, from which LIQUID ALBOLENE is refined, are no longer obtainable, owing to the European war.

As soon as present stocks are exhausted LIQUID ALBOLENE will be out of the market.

To avoid inconvenience to physicians we have prepared an "American Liquid Petrolatum," which we are offering as a temporary product to take the place of LIQUID ALBOLENE until such time as we are again able to secure supplies of Russian oil.

American Liquid Petrolatum is of different chemical composition from LIQUID ALBOLENE, is of slightly less gravity and viscosity, and is less resistant to mineral acids. Limited supplies only are being refined, and we urge physicians to be careful to specify LIQUID PETROLATUM, AMERICAN, McK. & R., in order to secure the best preparation to be had during the war, or until LIQUID ALBOLENE is again procurable.

Two Varieties — PLAIN and AROMATIC

McKESSON & ROBBINS, 91-97 Fulton St., NEW YORK

ARMOUR AND COMPANY
CHICAGO

To Doctors and Druggists:

SOME of the most valuable medicines are of animal origin. Pepsin, Pancreatin, Thyroids, Pituitary Liquid, Corpus Luteum, Red Bone Marrow, etc., are made from materials supplied by abattoirs.

All glands and membranes used in manufacturing medicines should be perfectly fresh and normal. All animals from which glands and membranes are taken should be healthy. Armour and Company are in position to guarantee the condition of all raw material used in making their therapeutic products and the health of the animals from which this raw material is taken.

Every cow, pig and sheep killed by Armour and Company is inspected by the U. S. Government, and every gland is selected with rigorous care. All raw material is put into process before it has had opportunity to deteriorate, and all finished preparations are analyzed and made to conform to the most reliable standards.

Armour's facilities for manufacturing organo-therapeutic agents are unequaled anywhere, and we believe it is to the interest of Physicians and Pharmacists and their clientele to specify **Armour's** when any remedy of animal origin is required. Literature on request.

ARMOUR AND COMPANY, Chicago

POMEROY
FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY
41 WEST STREET, BOSTON

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

THE BOSTON
Medical and Surgical
JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 7

THURSDAY, FEBRUARY 18, 1915

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

THE TREATMENT OF DIABETES. *By Frederick W. Allen, M.D.*, New York.

SOME PERILS CONFRONTING STATE CARE OF THE INSANE. *By Charles P. Bancroft, M.D.*, Concord, N. H.

THE PRE-OPERATIVE DIAGNOSIS OF TUBERCULAR MESENTERIC AND RETROPERITONEAL GLANDS. *By Edw. H. Risley, M.D.*, Boston.

A LOCALIZED, SUBACUTE FORM OF BRONCHO-PNEUMONIA. *By Ralph C. Larrabee, M.D.*, Boston.

THE FIELD FOR LOCAL ANESTHESIA AND OF SPINAL ANESTHESIA IN GENITO-URINARY SURGERY. *By Arthur Hallam Crosbie, M.D.*, Boston.

MEDICAL PROGRESS

REPORT OF PROGRESS IN MENTAL DISEASES. PART II. *By Henry R. Stedman, M.D.*, Brookline, Mass.

MASSACHUSETTS MEDICAL SOCIETY

STATED MEETING OF THE COUNCIL. FEBRUARY 3, 1915.

EDITORIALS

BLOOD-PRESSURE DURING PREGNANCY.

EUGENIC LEGISLATION.

HOSPITAL QUIET ZONES.

THE LOCAL PUBLIC HEALTH OF SUMMER RESORTS.

For complete table of contents, see first text page.

COMPLETE ON JOINT FRACTURES

Cotton's Dislocations and Joint Fractures

This work by Dr. Cotton bears the unmistakable stamp of authoritative knowledge. The presentation of the entire subject is unusually complete and systematic. *Joint Fractures*—those conditions that demand the most careful treatment in order to obtain the best results—are given especial attention. You get here much more information on this important subject than will be found in contemporary works. Dr. Cotton's book tells you how to *diagnose* joint fractures and how to treat them. You want to restore *complete* function to your patient's limb, if it is possible—you want to prevent *ankylosis.* You get here points that will help you do this—the fruits of Dr. Cotton's personal experience covering many years.

There are over 1200 illustrations—all of them original and the work of Dr. Cotton himself. Each conveys only the "points" Dr. Cotton wishes to drive home in that particular step, so the information is conveyed at a glance.

London Lancet.—"It would be of service in the hands of consultant, casualty surgeon, and general practitioner alike, for they will find in it much to assist and guide them, and very little with which to quarrel."

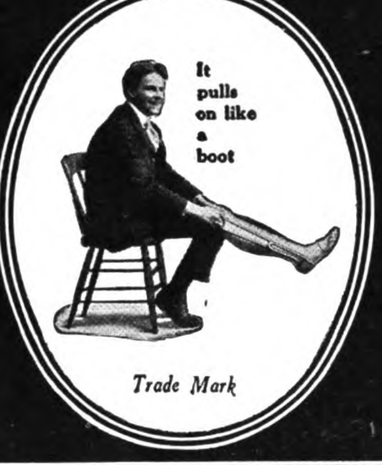
Octavo of 654 pages, with 1201 original illustrations. By FREDERIC JAY COTTON, A.M., M.D., First Assistant Surgeon to the Boston City Hospital. Cloth, $6.00 net; Half Morocco, $7.50 net.

W. B. SAUNDERS COMPANY **West Washington Square, Philadelphia**

Entered at the Post-office at Boston as second-class matter

THERE IS NO SUBSTITUTE FOR
QUALITY IN SURGICAL APPLIANCES
If you miss it you do not score at all.

"TRADE MASTER MARK"
ELASTIC
STOCKING


It pulls on like a boot
Trade Mark

Send us your name and address. We want to mail our catalog and more particulars about the POMEROY idea of QUALITY.

Fully equipped offices with men's fitting department - exclusive ladies' department and mechanical shop - located in the following cities:

NEW YORK
34 E. 23rd Street
330 Lenox Avenue

CHICAGO
339 S. Wabash Ave.

BROOKLYN
208 Livingston St.

BOSTON
41 West Street

NEWARK
825 Broad Street

SPRINGFIELD
340 Bridge Street

POMEROY
41 WEST ST., BOSTON

Current Literature

Bulletin of the Johns Hopkins Hospital.

December, 1914.

1. *Twenty-fifth Anniversary of the Johns Hopkins Hospital.* 1889-1914.
2. *Index.*

This number is given over to the publication of addresses delivered at the Twenty-fifth Anniversary of the Johns Hopkins Hospital. [J. B. H.]

The Lancet.

December 26, 1914.

1. *Goodall, E. *The Croonian Lectures on Modern Aspects of Certain Problems in the Pathology of Mental Disorders. Lecture IV.*
2. Jones, A. W. *A Case of Intestinal Obstruction, with Some Notes on Operative Technic.*
3. Aubrey, G. K. *Stretchers for the Wounded in the Trenches.*

1. Goodall, in the fourth Croonian Lecture, takes up in great detail the occurrence of the Wassermann reaction in various mental disorders, presenting his results in tabular form. He devotes special attention to the occurrence and variation of this test in dementia paralytica but discusses briefly its presence in other conditions. He then describes the newer methods of examination of the cerebrospinal fluid in mental disorders, the estimation of proteins, in particular nitrogen, and of cells. He then compares the results of these tests, the Wassermann test, the increase and decrease of the cell count. [J. B. H.]

January 2, 1915.

1. Eve, F. *The Bradshaw Lecture on Acute Hemorrhagic Pancreatitis: With Remarks on the Etiology of Chronic Pancreatitis.*
2. *Sheen, A. W. *Some Experiences of Shell Wounds in the Present War.*
3. Shenton, E. W. H. *X-rays in War Time.*
4. Eason, H. L. *A Case of Spontaneous Recovery from Detachment of the Retina.*
5. Fitzmaurice-Kelly, M. *Amputations in War Surgery.*
6. Barwell, H. *Two Cases of Cicatricial Stenosis of the Larynx.*
7. Mercier, C. A. *Leper Houses and Medieval Hospitals.*

2. Sheen describes his experiences of shell wounds in the present war. The article is of interest, although presenting nothing particularly new. There are some excellent x-rays showing some microscopic fractures. [J. B. H.]

British Medical Journal.

December 26, 1914.

1. Marshall, C. D. *Color Vision and Tests for Color Blindness.*
2. Sheen, A. W. *Colectomy for Intestinal Stasis.*
3. Thompson, G. S. *An Operation for Movable Kidney.*
4. Shipley, A. E. *Cockroaches.*
5. Stewart, P., and Laing, J. T. C. *A Case of Tetanus Treated by Injections of Carbolic Acid.*
6. Edgeworth, F. H. *Pneumonia Following Antityphoid Inoculation.*
7. Barber, M. C. *Injury to Heart without Fracture of Rib.*

(*Continued on page iv.*)

COLLEGE LIBRARY
FEB 18 1915

The Boston Medical and Surgical Journal

Table of Contents

February 18, 1915

ORIGINAL ARTICLES.

THE TREATMENT OF DIABETES. *By Frederick M. Allen, M.D.*, New York.......... 241
SOME PERILS CONFRONTING STATE CARE OF THE INSANE. *By Charles P. Bancroft, M.D.*, Concord, N. H.......... 247
THE PRE-OPERATIVE DIAGNOSIS OF TUBERCULAR MESENTERIC AND RETROPERITONEAL GLANDS. *By Edw. H. Risley, M.D., F.A.C.S.*, Boston.......... 253
A LOCALIZED SUBACUTE FORM OF BRONCHO-PNEUMONIA. *By Ralph C. Larrabee, M.D.*, Boston.......... 257
THE FIELD FOR LOCAL ANESTHESIA AND OF SPINAL ANESTHESIA IN GENITO-URINARY SURGERY. *By Arthur Hallam Crosbie, M.D.*, Boston.......... 260

MEDICAL PROGRESS.

REPORT OF PROGRESS IN MENTAL DISEASES. PART II. *By Henry R. Stedman, M.D.*, Brookline, Mass. (Concluded.).......... 262

BOOK REVIEWS.

Case Histories in Obstetrics. By Robert L. DeNormandie, M.D. 265
Local and Regional Anesthesia. By Carroll W. Allen, M.D.... 265
Thy Myth of the Birth of the Hero. By Otto Rank, M.D..... 266
Psycopathology of Everyday Life. Sigmund Freud, LL.D..... 266
The Unconscious. Morton Prince, M.D., LL.D.......... 266
The Clinics of John B. Murphy, M.D.......... 266

EDITORIALS.

THE BLOOD-PRESSURE DURING PREGNANCY.......... 267
EUGENIC LEGISLATION.......... 268
HOSPITAL QUIET ZONES.......... 270
THE LOCAL PUBLIC HEALTH OF SUMMER RESORTS.......... 271
MEDICAL NOTES.......... 271
CURRENT LITERATURE.......... ii

MASSACHUSETTS MEDICAL SOCIETY.

STATED MEETING OF THE COUNCIL, FEBRUARY 3, 1915.......... 275

OBITUARY.

THOMAS BRYANT, F.R.C.S., M.Ch., M.D.......... 279

CORRESPONDENCE

REGISTRATION OF NURSES IN MASSACHUSETTS. *Walter P. Bowers, M.D.*.......... 281
A MISREPRESENTATION CORRECTED. *Richard C. Cabot, M.D.*..... 282
INFORMATION ABOUT DR. SMILIE. *"Assistant."*.......... 282
THE ROENTGEN DIAGNOSIS OF PULMONARY TUBERCULOSIS. *Isaac Gerber, M.D.*.......... 282
RECREATION FOR MEN IN SANITARIA. *Edward L. Parks, M.D.*... 283
BELGIAN PHYSICIANS' RELIEF FUND. *F. F. Simpson, M.D.*..... 283

MISCELLANY.

THE HEALTH OF YORK.......... 279
CINCHONA OR CHINCHONA.......... 279
NOTICES, APPOINTMENTS, RESIGNATIONS, RECENT DEATHS, BOOKS AND PAMPHLETS RECEIVED.......... 284

Original Articles.

THE TREATMENT OF DIABETES.*

BY FREDERICK M. ALLEN, M.D., NEW YORK.

[From the Hospital of the Rockefeller Institute for Medical Research, New York.]

IT is customary to emphasize the importance of the subject of the treatment of diabetes by calling attention to the increase of diabetes among civilized peoples. Magnus-Levy[1] gives German hospital statistics showing that in thirty years the total number of patients increased 3.3 times, and the number of diabetic patients increased 19 times. Not merely the number of cases, but also the number of deaths has increased. The statistics for the registration area of the United States show, from 1901 to 1905, an annual average of 3772 deaths from diabetes, and a steady subsequent increase, so that in 1912 the deaths from diabetes were 9045. Authorities are practically unanimous in the opinion that improved diagnosis is not enough to account for this increase, that is, the increase is real and not merely apparent. Moreover, as Magnus-Levy points out, mortality figures fail to show the true incidence of diabetes. The majority of diabetics are elderly persons, and these often die of some cause other than the diabetes itself. Even among younger persons many deaths are recorded under tuberculosis and other infections, when the important predisposing cause was diabetes. Accordingly, the situation is that present prophylactic methods have not prevented an increased incidence of diabetes, and present therapeutic methods have not prevented an increased death-rate.

Rollo, an English army surgeon, in 1796 inaugurated modern diabetic therapy by limiting patients to animal food. Bouchardat and Cantani restricted the harmful excess of protein, and employed green vegetables. Naunyn has wielded a powerful influence in favor of the restriction of protein, and also occasional fast-days. His life has extended from the pioneer period to the present, and he deserves to be honored as the foremost clinician in the history of diabetes, whose methods and ideas have stood the test of time better than any others. Stadelmann, a pupil of Naunyn, in 1883 founded the theory of acid-poisoning as the cause of diabetic coma, and inaugurated the alkali treatment. Van Noorden in 1903 introduced the so-called "oat-cure." Various workers have elaborated these methods in various details, but essentially they constitute the present treatment of diabetes, and are the only measures that have shown any therapeutic value. No text-book or reliable treatise on diabetes claims that every case can be checked. On the contrary, all authorities describe a considerable class of cases that are past hope, and all agree in giving such patients carbohydrate for the sake of diminishing acidosis.

Special mention may be made here of treatments which have involved fasting. Naunyn's use of occasional single fast-days was to clear up a resistant glycosuria, to improve tolerance, and to ward off coma. Van Noorden makes use of the increased tolerance resulting from fast-days or vegetable days as a preparation for his oatmeal treatment. He also now follows Naunyn's plan of one or two fast-days to prevent coma, and he describes the immediate rapid fall of acidosis thus produced. In a correct and forcible metaphor, he speaks of these days as "metabolic Sundays." He states that the benefit of these days is such that he can generally make the patient gain weight in the few days immediately following. This custom of forcing the patients to gain weight may prove to be a mistake which he and others make in the treatment of severe diabetes. Another form of using fast-days is the method introduced by Guelpa[2] of Paris. He believes that diabetes is an auto-intoxication. His treatment is a fast of three days or more, with a bottle of hot Hunyadi-Janos water each day, followed by first a milk, and then a vegetable diet, with occasional repetition of the fasting and purgation. It would be easy to aim ridicule at Guelpa, as those who read his original work will perceive. But it is better to emphasize the serious fact that Guelpa has used a rigorous fasting treatment for diabetes, and has demonstrated real benefit from it in some cases. On the other hand, his theories are grotesque, his excessive purging is an unnecessary inconvenience, and his milk and vegetable diet precludes success in any but mild cases. A search of his list of so-called cures shows that there is not a severe case among them. The rather startling character of Guelpa's treatment, and his exaggerated claims and active propaganda for it, have roused some interest among physicians and laymen in various parts of the world. Some quacks and nostrum-makers have taken their cue from him, and recommend fasting and purgation. Authorities on diabetes have ignored his treatment, because it is so far inferior to the ordinary rational methods. But, though the other features are erroneous, the benefit of the fasting deserves to be recognized.

---

* Read at a meeting of the Suffolk District Medical Society in connection with the Boston Medical Library, December 2, 1914.

There is considerable confusion regarding diabetes and glycosuria, and some physicians distinguish alimentary glycosuria, nervous glycosuria, gouty, hepatic, or other forms of glycosuria, as entities distinct from diabetes. Renal glycosuria is perhaps a rare genuine condition. There is no better rule than that made by Joslin[3]: "I consider any patient to have diabetes mellitus and treat him as such, who has sugar in the urine demonstrable by any of the common tests. This is a broad definition, but is safer for the patient than the use of the term glycosuria, which begets indifference." There are a few patients who, because of advanced age or other special reasons, need little or no treatment for their diabetes, and the main object is to keep them comfortable. My remarks throughout this paper are meant to apply only to that great majority of diabetics who are unquestionably in need of treatment.

It is impossible here to go into details of the theoretical and experimental side of diabetes, which I have reviewed elsewhere.[4] To assist clearness, one statement may be made concerning the doctrines of the Vienna school, which has upheld especially two interrelated theories. One is that diabetes is nothing but an increased production of sugar, without loss of the power to utilize sugar. The other is the polyglandular or pluriglandular doctrine, which represents diabetes as a loss of balance between antagonistic glands; in particular, the chromaffin system, as a stimulator of sugar production is supposed to be resisted by the pancreas, as an inhibitor of sugar production. The one statement to make concerning both these doctrines is that they have never been supported by facts; and it would not be necessary to mention them here except for the over-zealous manner in which they have been promulgated among the medical profession. Certainly the great mass of evidence and the great majority of investigators favor the view that in diabetes there is a loss of power to utilize sugar, not a mere acceleration of sugar formation. Also, the internal function of the pancreas is somehow to make possible the utilization of sugar by the tissues. There is no valid proof in the entire literature to show that the adrenals oppose this function of the pancreas, or that the pancreas inhibits sugar formation or opposes the adrenals in any way. Most of those here are familiar with the work of Cannon, who has shown how states of strong emotion are attended by splanchnic stimulation, adrenalin discharge, and hyperglycemia, and has suggested the explanation that this mechanism provides increased sugar for the muscular activity naturally associated with such emotions. I cannot forbear mentioning how unthinkable such a mechanism would be, if the adrenal stimulation and adrenalin discharge opposed the utilization of the sugar by the tissues. It will conduce to clearness if people will dismiss from their minds those diagrams showing imaginary lines running between pancreas, adrenals, liver, thyroid, etc.

The best established and most generally accepted theory is that diabetes results from deficiency of the internal secretion of the pancreas. In a relatively small number of cases there is gross destruction of pancreatic tissue by infection or otherwise, and here early surgical intervention, in the form of drainage of the gall-bladder or other suitable measures, is presumably the most important treatment. In the great majority of cases the gross appearance of the pancreas is normal. Changes in the islands of Langerhans occur in animals with experimental diabetes, and changes in the islands of human patients are being found more frequently as they are sought more carefully. Even after the longest and severest clinical diabetes, changes in the islands may be difficult to discover, and complete destruction of all the islands in the human pancreas must be a great rarity, if it ever occurs. In animals the islet changes are secondary to the diabetes. In human cases it is still unknown to what extent the changes are primary, producing the diabetes, or to what extent they may be secondary, produced by the diabetes. It seems that a considerable functional factor is generally present; that we are never dealing entirely with destruction of tissue which cannot be replaced, but always with a certain element of disturbed function, which can be broken down by overstrain or strengthened by rest. On the other hand, a full return to normal function is practically never obtainable.

Macleod,[5] in the opening of his book, gives a simple objective description of diabetes. He states how it appears at first as a weakened function of carbohydrate metabolism, next there is a weakened function of protein metabolism, and then in the severe cases an imperfect metabolism of fat. If we follow this plain, simple idea, it guides us to a rational therapy. Diabetes is commonly looked upon as a progressive, fatal disease. Of course in one sense it is a disease. But in another sense, it may be beneficial to implant the idea in both physicians and patients that diabetes is *not a disease*. There is no evidence that it is an infection, or an auto-intoxication, or anything else of that order. So far as I am aware, an inherent downward tendency has never yet been demonstrated in typical cases. For practical purposes we may well keep to the simple idea mentioned above, that diabetes is merely the weakness of a bodily function, namely the function of assimilating certain foods. It may be compared with indigestion. A weak stomach* may never become a strong stomach, but there is no cause for death unless the patient abuses the weak organ. The possibility and perhaps the probability exists that a weak pancreas is something analogous. Every person has his weak point, and ultimately breaks down at some one point, rather than everywhere simultaneously. If diabetes is a weakness of the pancreatic function, we can understand why the breakdown is most frequent in elderly persons, but generally most serious in young persons. This idea began with Naunyn. If a person overtaxes a weak stomach, the resulting distress punishes the error and forces him to desist. If he overtaxes a weak pancreas, nothing but intelligence can show him what is wrong. If there were no prompt reflex mechanism to prevent and punish overtaxing the digestive function, doubtless the death-rate from indigestion would be fully as high as the death-rate from diabetes now is, and indigestion might appear as a progressive fatal disease, for which all sorts of explanations and all sorts of remedies would be offered. Many a dyspeptic sits at table and longs for pleasant-tasting food, but dares not eat it because of the immediate penalty. Many a diabetic sits at table and longs for certain food, and perhaps eats it, even though he knows better. This is merely an illustration that the lower nerve centers are often more effective in controlling conduct than the higher centers. But if the conception is correct, of diabetes as the simple weakness of a bodily function without inherent downward tendency, then if the patient is obedient he may be kept from going down-hill simply by preventing him from overtaxing his weakened function. The weak pancreas may never become a strong pancreas. The patient may never be entirely normal again. But if our idea is fully correct, this precaution may save life.

The form of treatment embodying this idea was first worked out on animals, and has been described briefly elsewhere.[6] When about nine-tenths of a dog's pancreas is removed, the resulting condition may appear as a progressive fatal disease. But obviously we have produced not a disease, but merely the weakness of a certain function. If we try to keep the dog fat, and satisfy his large appetite, he goes steadily downhill for several months, and dies in extreme cachexia. But we can stop glycosuria by fasting, and can then place the animal on a low diet which will support life without producing glycosuria. Such an animal is thin, but strong and lively, with no cachexia and no sign of downward tendency. The treatment for patients is similar. The first step is to fast till glycosuria ceases, and then for twenty-four or forty-eight hours longer. At the same time, the ketonuria falls steeply. It quickly approximates what a normal individual would show under similar conditions, and the aim is to keep it constantly down to this level. Plain fasting suffices for the purpose; but since alcohol is a food which does not produce glycosuria and is said to diminish ketonuria,[7] it is generally given during fasting, especially if there is danger of coma. Its use or omission in later treatment depends upon individual conditions. Alkalies may be useful for the first few days if coma seems imminent, but are then no longer needed. Continuing the sodium bicarbonate may cause the ferric chloride reaction to remain positive longer than it otherwise would, with no benefit to the patient as far as I have seen.

When the fasting patient has been free from glycosuria for twenty-four to forty-eight hours, the next step is to begin feeding very slowly and cautiously. There need not be a fixed program. It is desirable to individualize the diet to suit the needs of different patients, and various physicians may have personal preferences of their own. The one requirement is that the patient must remain free from both glycosuria and acidosis. Any trace of sugar is the signal for a fast-day, with or without alcohol. The original fast, to clear up the urine in the first place, may be anything from two to ten days, but after that no fast need be longer than one day. The things to be considered in the diet are carbohydrate, protein, fat, and bulk. Frequently the first thing given after the fast is carbohydrate. No distinction is necessary between different forms of starch, but there are advantages in using vegetables, following Joslin's convenient classification on the basis of carbohydrate content.[8] The first day after fasting, the only food may be 200 grams of vegetables of the five and six per cent. classes. This is increased day by day until a trace of glycosuria appears, which is checked by a fast-day. The purpose of such a program is to learn the carbohydrate tolerance and to clear up the last traces of acidosis. After this carbohydrate period, or sometimes in place of it, protein is given. On the first day perhaps one or two eggs are given, and nothing else. More protein, generally as eggs and meat, is added day by day, until the patient either shows glycosuria or reaches a safe protein ration. The purpose here is to learn the protein tolerance, and to cover protein loss as quickly as possible. Fat is somewhat less urgently needed, except in very weak and emaciated patients, and it can be added gradually, as conditions seem to indicate. An element of bulk in the diet is necessary to give the comfortable feeling of fulness, and to prevent constipation. This is the great advantage of green vegetables. When they are fed raw, or cooked in steam, or boiled and evaporated so that no water is thrown away, they contain a definite quantity of carbohydrate, besides valuable salts; and this is the only form of carbohydrate that patients thus treated ordinarily receive. Some cases are so severe that even green vegetables cannot be tolerated. A little girl now in the hospital showed glycosuria when she was given nothing but 100 grams of celery and lettuce distributed through the day. Under these conditions the vegetables may be boiled through three waters, throwing away all the water. Nearly all starch is thus removed, and the most severe cases generally take these thrice-cooked vegetables gladly and without glycosuria.

---

* This term is of course meant only in the usual colloquial sense, to signify the digestive function.

One result of the initial program here described is the loss of weight. This is the thing which physicans have been accustomed to dread most but which, according to present indications, is beneficial in itself. In subsequent treatment, the patient is welcome to gain weight up to a certain point, provided he can do so without glycosuria or acidosis. The attempt to put on weight, according to the time-honored traditions of diabetic treatment, is one of the surest ways of bringing back all the symptoms and sending the patient down-hill. It is probably one of the chief causes of past failures in treating severe diabetes. In the severe cases it is found necessary to restrict all classes of food, and to test the tolerance of each patient for each particular class. Carbohydrate is given if possible, but is kept safely below the limit of tolerance. Protein must be kept fairly low, sometimes very low. With a dangerously low protein tolerance the working rule has been to exclude all carbohydrate, then feed as much protein as is possible without glycosuria. Experience thus far seems to indicate that every patient can tolerate his necessary minimum, and that glycosuria appears only when this indispensable minimum is exceeded; but a longer series of analyses will be necessary before asserting this as a fact. Fat has heretofore been considered as both safe and necessary in the diabetic diet. I realize the risk of disputing this doctrine, but must state the observation that patients may show a fat tolerance as truly as a carbohydrate or a protein tolerance. I have never seen glycosuria from fat alone; but there are patients whose urine is constantly negative on a given diet, who will show both glycosuria and ketonuria if butter or olive oil is added to that diet. The very severe diabetic may be both thin and weak, because he cannot metabolize enough food to be strong or well-nourished. But as long as his weakened function is not overtaxed, he seems able to retain such weight and strength as he has, at least for a considerable period. Any attempt to build him up with any kind or quantity of food beyond what he is able to metabolize perfectly, apparently hastens a fatal result.

The number of diabetics admitted to the Rockefeller Hospital has been twenty-seven. The majority were admitted only during the past month, therefore are still in the Hospital. The longest treatment and observation of any one patient has been nine months. The number of applications has considerably exceeded the accommodations, therefore selection has been possible. No very severe case has yet been rejected, and the policy has been to choose the worst cases of diabetes that could be found. Lately a few earlier or milder cases have been admitted, in order to learn what can be done with such patients. The youngest patient is aged ten. The oldest is a woman of sixty-nine, with incipient gangrene. Every patient treated has been made free from both glycosuria and acidosis. The number of deaths has been three. Of these two were untreated cases; viz., one man who entered the hospital in coma and died within three hours, receiving no treatment except an intravenous bicarbonate injection; and one woman who entered with acute heart failure and hemoptysis, and died on the fifth day, apparently from her cardiac lesion. The one treated patient who died was a twelve year old boy, who had had diabetes for seven years, the long duration being perhaps partly explained by the excellent care he had received. The emaciation was extreme; there had been albuminuria with casts for several months; he was almost totally blind with diabetic retinitis; he had been in partial coma on several occasions, and coma had been feared for several days before he entered the hospital. This boy became free from glycosuria and acidosis, and showed very satisfactory improvement for two and one-half months. He was taking a diet of sufficient quantity, and had acquired a tolerance of twenty grams of carbohydrate. He seemed to coöperate very cheerfully in the treatment as long as the fear of death was upon him, but as soon as he imagined himself out of danger, he showed surprising ingenuity in stealing food. Several such adventures caused him to lose ground seriously, and he died in a rather sudden and unexplained fashion, with urine still sugar-free, four months after entering the hospital. The essential cause of death was his extreme weakness. Accordingly, up to the present, the record is that no patient has died who has followed treatment. Deaths are to be expected, however, if we continue to accept the most extreme cases; and there is no desire to pretend that this treatment can save all patients.

The graphic charts shown here represent the records of four patients. These charts and analyses are made by or under the supervision of Miss Mary B. Wishart, as chemist.

The first chart is that of a man aged 34, with moderately severe diabetes of one year's standing. He originally weighed 175 or 180 pounds, without obesity, and he had lost fifty pounds. There was considerable glycosuria on ordinary strict diet; in two days' test on admission the output was 32 to 61 grams. There was a positive ferric chloride reaction, but no clinical symptoms of acidosis; and as we were busy with more severe cases, no quantitative determinations were done except for sugar. Four days of fasting were required before the urine was sugar-free. That is one indication that the diabetes was not very mild. Ketonuria ceased as usual. The diet was gradually increased, and the improvement was satisfactory. Then an experiment was started with quantitative determinations, and the chart shows how both glycosuria and ketonuria returned when fat was added to the diet. As this was a fairly mild case, an enormous quantity of fat was necessary to produce this result—more fat than the average patient could eat. Everything then cleared up promptly under treatment. He gained weight and was dismissed to resume his ordinary work, on adequate diet, but with orders to keep himself at least fifteen pounds below his previous weight.

The second case is a little more severe. The patient was an Italian tenement-house girl, seventeen years old, with diabetes of eighteen months' standing. One year ago she spent seven weeks in Mt. Sinai Hospital. The diabetes was not stopped, and she was dismissed, taking sodium bicarbonate and a limited quantity of bread. Before the diabetes she was slightly obese, weighing 120 pounds. Her weight when we received her was 92 pounds. On ordinary strict diet her urine showed 78 grams sugar, 11.7 grams acetone bodies as B. oxybutyric acid, and 3.1 grams ammonia, on 20 grams of sodium bicarbonate daily. She cleared up in the usual way and progressed satisfactorily. Her symptoms were reproduced by adding chiefly fat to the diet, and were cleared up again by the usual treatment. She was dismissed to go to work, on adequate diet, with urine normal, feeling perfectly well. She was not allowed to gain weight, and was ordered not to gain weight after leaving.

The third patient is a man aged twenty-nine, with diabetes of eighteen months' standing and unusual severity. He was thin and slight at his original weight of 145 to 150 pounds, and he entered the hospital weighing 110 pounds. He had been in the best of hands, but was never sugar-free from the outset. He was sent to us from the Presbyterian Hospital, where he had been for ten days in a dangerous condition. They had found the D: N ratio of the totally depancreatized dog, viz, about 2.8 to 1. We confirmed this in a four days' test on carbohydrate-free diet. During this time he was shooting downward with remarkable rapidity. While eating to his utmost capacity, he lost about a kilogram of weight per day, with a negative nitrogen balance of from 12 to 16 grams per day. Sugar excretion was 58 to 65 grams, acetone bodies 20 to 39 grams, ammonia 2.88 to 4.25 grams. Treatment had to be begun because he was going into coma. The chart shows the subsequent progress, during his four months in the hospital. So far, this record is the most unsatisfactory one we have, and I show it for that reason. There is no ketonuria, but the occasional slight glycosuria is bad, and is only partly explained by intentional dietary tests. There is no immediate danger, and the patient feels much better and more comfortable in every way than before treatment. He can be up and dressed all day, and can take a little exercise or go to the theatre. But he is thin and weak, unfit for work, and still in need of hospital care. His future is doubtful.

The fourth patient is the most severe we have had. He was a strong, healthy Irish boy, aged seventeen years, apparently absolutely normal until the sudden onset of diabetes ten months ago. He had chiefly dispensary treatment, and was twenty-five days in Bellevue Hospital last June, but the diabetes was never stopped. His normal weight was 133 pounds. He came to us weighing 91 pounds. He had just had a severe gastro-intestinal upset with weakness such that he was expected to die, and came to the hospital as soon as he was able to leave bed. His blood-pressure was 85 systolic, 75 diastolic. He was sent to Bellevue Hospital for calorimeter tests by Dr. DuBois in connection with the treatment, and has remained there up to the present time. I am indebted to Dr. DuBois for all the records and analyses except those of the acetone bodies. The preliminary tests were cut short because coma seemed imminent. The most interesting data are that on Nov. 11 he received no food except 50 c.c. cream early in the morning, and subtracting the carbohydrate of the cream, the D/N quotient on this day was 3.69.[9] The blood-sugar on this day was 0.3%. The respiratory quotient was 0.697, indicating the combustion of little or no carbohydrate. The chart shows the subsequent history to date. It is noteworthy that the blood-sugar has declined, but has never yet reached normal. This is the only case, among several tested, in which the blood-sugar has not fallen promptly to normal. The diet now consists of meat, eggs, butter, olive oil, whiskey, and thrice-cooked vegetables, representing a maximum of 9.77 grams nitrogen and 1991 calories daily. A trace of glycosuria appeared on this maximum diet, which has therefore been slightly reduced. The patient is subjectively improved. The respiratory quotient indicates that the protein sugar is now burned. The marked gain in weight is essentially water-storage, which perhaps represents partly a normal recovery of water by the previously dried tissues, and perhaps partly an invisible edema.

These cases afford a general idea of the methods and results of this treatment. There seems evidence that it clears up certain cases which heretofore have not been cleared up, and that the cases which could be cleared up heretofore are cleared up more quickly by this method. Of course it is not a "cure" of diabetes; and essentially the new feature in it is that, upon the information gained from animal experiments, it attempts to do the same things that the rational treatment has attempted previously, but to do them more quickly and accurately and thoroughly. The immediate results are what we can state. The permanent results are yet to be demonstrated, and they are the most important. As friends here in Boston have told me, what they wish will be to know, one year, two years, and at longer periods hereafter, how many of these patients are dead, how many are free from glycosuria and other symptoms, how many are fit for work or play, and so forth. These are in fact just and decisive questions. The answer to them will be governed by two factors, one of which may be called the scientifie factor, and the other the human factor. It is worth while to discuss these two factors, to give some idea of the hopes and possibilities.

The scientific factor has to do with the theoretical value of this treatment under ideal conditions. What are its powers and its limitations, provided it is perfectly carried out? It seems possble that it may offer the hope of abolishing, in diabetes, all those things which have traditionally been considered as practically synonymous with diabetes. It gives the vision of a diabetes in which there is no glycosuria, no acidosis, no use for alkalies or other drugs, no complications, no gangrene, no downward progress, no coma, no death. That is the ideal which I venture to put into words, without knowing whether the future will justify it or not. The vital question must be decided: Is there or is there not an inherent downward tendency in diabetes? The answers of the past are not conclusive, because there has been too much overfeeding with carbohydrate-free diet. If the pancreatic function is spared by keeping the total diet low enough and the body weight low enough, will there be any spontaneous downward tendency? All that can now be said is that in the longest observation, namely nine months in a severe case, the condition is still good. But the most severe cases cannot give the answer. To keep these patients alive at all probably involves a strain upon the pancreatic function, comparable to the strain of excessive carbohydrate-free diet in the milder cases. This girl who has been in the hospital for nine months has improved subjectively and seldom needs fast-days, and is expected to go home before long; but when it was attempted recently to add half a small grapefruit to her carbohydrate-free diet, the result was an immediate glycosuria which required a fast-day to stop it. In these other cases, the addition of a few grams of protein or fat makes trouble. That is how close the margin is, and it is too dangerously close. It may be considered probable that these very severe cases will go slowly downhill, and that treatment can merely prolong their lives and keep them more comfortable, without saving them. From the experience with milder cases, we might think that when these very severe patients are kept free from glycosuria for several months continuously, their tolerance ought to improve. So far, this hope has been disappointed. Gain in tolerance marks the milder cases. In the cases of utmost severity, it is as if the trouble were organic, or as if the breakdown, if functional, were beyond repair. An interesting theoretical question is raised as to the reason why apparently all patients, even those with total diabetes, can be free from glycosuria and acidosis if brought to a starvation level, but cannot tolerate any attempt to raise them much above this level. From a practical standpoint, even under ideal conditions, I cannot see much hope for the third and fourth patients described here. The second would make an interesting study if she could be kept under ideal conditions. The first patient is much more hopeful. The important practical point is that patients should never be allowed to reach any such condition. All four of these patients came under medical care near the outset of their trouble, but the physicians did not stop the glycosuria or the ketonuria in a single one of them. A boy of sixteen years has recently been admitted to the Hospital with heavy glycosuria of only a month's duration. His urine was made normal in two days, and he will be dismissed with a favorable prognosis conditional on good behavior. The cases of utmost severity are really useful chiefly as tests to demonstrate the benefits of methods which should be applied to all cases before they become severe. If there is ever to be the ideal epoch of treatment which I mentioned above, it can come only through the application of efficient, intelligent methods by the great mass of general practitioners, who are the ones that see the great mass of diabetics in the early stages. When such methods are used from the outset, we shall have opportunity to learn whether downward progress in diabetes is inevitable.

There is now to be considered the human factor. This involves recognition of the important fact that conditions are seldom ideal, human nature is imperfect, and the treatment is long and onerous for both physician and patient. Nevertheless, one of the principal hopes that I have for this treatment is that it will prove useful in assisting the human factor. This proposition may be discussed in relation to the physician and to the patient. However specialists may feel, there is no doubt that a majority of average practitioners feel bewildered and helpless concerning diabetes. The widespread use of drugs, proprietary nostrums, and various irrational treatments probably indicates not so much confidence in these things as ignorance of other means to use. Granting that the principle is correct, there should be considerable value in impressing physicians at large with the idea that diabetes is merely the weakness of a bodily function, not a progressive fatal disease. Many physicians fear to withdraw carbohydrate, if the withdrawal causes any marked ketonuria. Accordingly, they give carbohydrate and thus send the patient downhill with continuous glycosuria.[11] The treatment above described will stop glycosuria very promptly, and instead of producing ketonuria will abolish it if it already exists. It will be beneficial if the general medical profession comes to realize that the interests of the patient require the stopping of both glycosuria and ketonuria, and that it is possible to stop these things within a very few days.

Taking up the patient's side of the matter, it can be said that no one has yet refused to take the treatment. The treatment is rigorous, especially in severe cases, but every patient has reported increased comfort, and has preferred to endure the low diet rather than to return to what he suffered before beginning treatment. Gastro-intestinal troubles are absent. The patients have shown none of the carbohydrate hunger which is supposed to belong to diabetes. When asked what they would like to have added to the diet, they have said bacon more often than bread. In view of the opportunity to choose patients, the question arises as to what sort should be selected. The choice might be limited to intelligent, well-to-do, careful persons, and thus an attempt made to show what can be done under ideal conditions. This might be called an unfair test, since most physicians and hospitals cannot thus select their patients. Therefore up to the present, patients have been selected solely on the basis of severity, without regard to character, intelligence, or surroundings. Also, it could be arranged to keep all these patients by themselves. But since some hospitals cannot do this, most of our patients are now kept in wards along with cardiac and other cases, where they might steal food if they tried hard enough, and where they can see trays of bread and desserts going to other patients. These are conditions which they must face when they leave the hospital, and they might as well be accustomed to them. There has been practically no trouble on this account. By taking patients who are poor, ignorant, careless, and lacking in self-control, it is made certain that our statistics will suffer. Some of these patients will promptly relapse, and others will drop out of sight and never be heard from again. These conditions must all be faced, in order to learn what can be done with the ordinary run of patients. The ultimate results will fall easily into two groups. When the patients follow instructions carefully, we shall learn what happens under good conditions. If they go downhill under these conditions, the scientific factor will be at fault; this will be the test of it. But when the patients fail to obey instructions and proceed to eat bread and potatoes, this will have nothing to do with the theory of the subject, and will represent merely a failure of the human factor.

It will be of interest to know whether our method can help this factor. Most patients of all classes desire to live, and desire to be free from the symptoms that trouble them. Our severe cases have nearly all been told elsewhere that they must die, and even the milder ones generally have a wholesome fear of the word diabetes. It seems to make a very good beginning when they are told that their glycosuria will cease within a few days; that they have not a mysterious fatal disease, but merely the weakness of a bodily function, like a weak stomach, and that it is entirely their own responsibility to live or die. Even for the patients who could be cleared up within a few weeks or months by the older methods, it seems an advantage to clear up the urine within a few days, and devote the remaining time to getting the patient accustomed to his diet and teaching him to take care of himself. On leaving the hospital, the patient is given orders as follows: to save and test his urine every day by Benedict's method, which even the ignorant can learn; if sugar appears, to check it instantly by a fast-day and then reduce his diet somewhat; to take a fast-day in bed at stated intervals, generally once in two to four weeks, even if sugar does not appear; to live on a diet of certain articles of food in certain approximate quantities; and instead of weighing the diet, to weigh himself at least once a week, and never let his weight rise above a stated figure. This figure is always below his original maximum weight, and is made lower in proportion to the severity of the diabetes.

As mentioned before, only the immediate results are stated as facts, and time must decide concerning the permanent value of the method.

REFERENCE.

[1] Magnus-Levy, A.: Spezielle Pathologie und Therapie innerer Krankheiten (Kraus and Brugsch), 1913, 1-85.

[2] Guelpa: Bull. Général de Thérapeutique, 1909 and 1910. The same, published in book form, "Autointoxication et Desintoxication," Paris, 1910. Brief notes elsewhere, the latest being a paragraph on page 392, Vol. vi, of the Proceedings of the International Congress of Medicine, 1913.

[3] Joslin, Elliott P.: Chapter on Diabetes Mellitus in Hare's "Modern Treatment," 1911, ii, 427.

[4] Allen, Frederick M.: Glycosuria and Diabetes. Harvard University Press, Cambridge, Mass., 1913.

[5] Macleod, J. J. R.: Diabetes: Its Pathological Physiology, New York, 1913.

[6] Allen, Frederick M.: Studies Concerning Diabetes. Jour. Am. Med. Asso., Sept. 12, 1914, p. 939.

[7] Neubauer, Otto: Münch. med. Wochenschr., 1906, 791-793.
Benedikt and Török: Ztsch. f. klin. Med., 1906, lx, 329-348.

[8] Joslin, Elliott P.: BOSTON MED. AND SURG. JOUR., Sept. 4, 1913, 348-353.

[9] Cf. Mandel, A. R., and Lusk, Graham. Deutsch. Arch. f. klin. Med., 1904, lxxxi, 472-492.

[10] Fraudulent gluten breads are also a frequent cause of glycosuria. For reliable brands, see analyses of diabetic foods in the 1913 report of the Connecticut Agricultural Experiment Station.

SOME PERILS CONFRONTING STATE CARE OF THE INSANE.*

BY CHARLES P. BANCROFT, M.D., CONCORD, N. H.,

Superintendent, State Hospital, Concord, N H.

THE purpose of this paper is to call attention to old evils appearing in more virulent form at the present time. The centralized management of all state institutions, quite popular throughout the country, makes a brief review of the history of the public care of the insane both pertinent and instructive. The history may be roughly divided into three periods: first that of neglect, second of mixed care, and third of state care.

---

* Read before the Boston Society of Psychiatry and Neurology, November 19, 1914.

The period of neglect began in early Colonial times and extended through the first days of the republic to the beginning of the nineteenth century. The failure to properly provide for the insane during these early years may be attributed to infrequency of the disease, and profound misconception of its real nature rather than any lack of the true spirit of charity. In the very earliest Colonial days one may possibly trace a certain portion of this indifference to the austere religious conception of life characteristic of the Puritan. These serious religionists may have regarded the misfortunes of the insane as a judgment of God upon some moral perversity or short-coming. It is conceivable that their mental attitude may have curbed any feelings of sympathy which might naturally be awakened by the sufferings of the mentally afflicted.

Probably infrequency of the disease during the Colonial period was the most prominent underlying factor in this early neglect of the insane. During this period there were few insane, not merely because there was a sparse population, but because the early colonists were strong virile men and women. There were few weaklings. These first settlers were both mentally and physically the best equipped of their race. They were the ambitious adventurous pioneers, anxious to secure for themselves larger liberty in a new land. The very qualities of mind and body that led them to renounce the easier life in their native land and endure the privations and hardships of a new and unsettled wilderness were inconsistent with brain weakness. Insanity was rare because these earlier inhabitants for the most part possessed sound minds in sound bodies. Apparently mental defect was so infrequent that communities regarded as freaks such sporadic cases as did occur, rather than mentally diseased persons whose maladies might reappear in others and require special care. This disregard of insanity was a logical result of the prevailing misconception of its real nature. Consequently defective and insane persons of the early Colonial period were, if poor, allowed to roam at large with little or no care. Among families of means such cases were segregated and cared for at home as well as circumstances would admit.

Eventually the increasing number of mentally diseased persons made some sort of recognition imperative both for their own safety and that of the community. It was evident that public care in some form must be adopted. The problem, being a local one, its solution was sought within the conventional boundaries of the township. The town officials were called upon to care for their own insane as best they could, in the poorhouse or other extemporized way.

In some states, especially the less populous, the town system of care was felt to be inadequate. The numerically small town and the town with limited finances found the expense burdensome; they could not provide suitable and in some instances even decent care. As facilities for intercommunication multiplied, the mutual interests and common relationship between towns in the same county became more manifest, with the resulting conviction that the county could furnish better care for all the insane within its boundaries than the towns acting independently. In these states county farms with large acreage and many buildings were established, and the old town poorhouses were closed. The result was greatly improved care of the insane. The larger unit not only provided better care, but under this system there was a diminished feeling of disgrace in the mind of the recipient of this form of public charity. The closer the donor to the beneficiary, the more intimate the personal relationship between the two, the more keenly does the recipient feel his misfortune.

As has been said, the period of mixed care, roughly speaking, began in the early days of the nineteenth century. With few exceptions, at that time the majority of the insane were maintained at the expense of the towns. Town care was generally accepted as the only method of public provision for the dependent insane. Early in the nineteenth century an awakening to the needs of the insane appeared. Partial state care was advocated, a method which received staunch support in Miss Dorothea Dix. The movement spread throughout the country, and state institutions appeared throughout the land. While these were nominally state institutions, no attempt was made to provide within their walls for all the insane in any state, nor was entire state support of all the patients admitted contemplated at that time. During this period of mixed care the dependent insane were supported and cared for by the town, the county, and the state in the three different classes of institutions enumerated.

During all these years experience was demonstrating that in the field of public charities and corrections the state is better fitted for the administration of the complex problems involved in the care of the insane. It is now generally conceded that of the three administrative units—town or city, county, and state—the latter is the one best equipped for the successful care of the insane, involving as it does intricate questions of treatment, prevention, after-care and scientific research. The slow evolution of state care from the remote days of neglect is evidence of the soundness of the consummation attained. The principle of state care achieved only after years of experience and mature conviction is unquestionably logical and correct.

When the asylums, as they were formerly called, were first established, their management was modeled after that of the general hospital, viz., boards of unsalaried trustees, whose only compensation was their travelling expenses.

The governors of the several states selected for these positions, business, professional, and scientific men, whose interest in the work would be assured irrespective of any remuneration. This plan has always proved most satisfactory in the government of either public or private charitable institutions. Partisan political affiliation played no part in the selection of these trustees. The result was a disinterested service freely given by men of the highest ability. The very fact that there was "nothing in it," in the sordid political sense, kept away "grafters" and secured permanency of service. At first only men were appointed on these boards, but later and long before the present feminist movement began the need of women's assistance was realized and two or more women were almost invariably represented in the personnel of the boards. The advantages accruing to the state from this form of institutional polity are economy to the state, continuity of service, elimination of politics from the conduct of state charities, and a certain definite zeal and interest in the work that comes from the intimate personal association existing between the superintendent, his medical staff, and the managers of the institution. The more impersonal and the farther removed from the daily life of the hospital is the board of managers, the less the interest and the more mechanical becomes the service. The more intimate the personal relationship between a local board of interested trustees and the superintendent and his patients, the more positive will be the impression upon the hospital. In fact, the successful hospital is the reflection of the character and devotion of its board of managers and their superintendent. Hospitals, like persons, have an individuality, which, after all, is merely the expression of the devotion, enthusiasm, and experience of those in charge.

The government of the state's charitable institutions by unsalaried boards of trustees has the distinct advantage of stimulating a general public interest in such charities. Undoubtedly this idea primarily suggested the management of the general hospitals by unpaid trustees. Society does and should take an interest in the benevolences of the state. Such interest should be fostered and utilized in every possible way. If professional and business men, or those with leisure and large experience in charitable work, are willing to devote their time and energy without remuneration to the administration of our public charities, by all means should such service be accepted and encouraged by the state as a civic obligation of its citizens. Not only is economy secured to the state by such gratuitous service, but a zeal and spirit of devotion is attained that is invaluable. One of the chief objections to the old town and county care of the insane under partisan political appointees was the indifferent service rendered by such management. Scientific study, proper classification of patients, and intelligent care were too often sacrificed to a spirit of petty political economies, which lost sight of the real purpose of the charity.

Within recent years an entirely different system of institutional polity has arisen. Under this method all the state's charitable and penal institutions are placed under the management of central boards of control, with offices at the state house. The local boards of trustees, who met at the institution over which they were appointed, are abolished. The board of control usually consists of three members, who have salaries and are appointed with some reference to their party political affiliations. Women are not represented on these boards and consequently are not represented in the management of any of the state institutions. The new system, beginning in the West, has recently moved rapidly eastward, and for obvious reasons has become quite popular with the politicians. A fancied economic saving to the state has, however, prejudiced many well-meaning persons in its favor. Misled by specious reasoning, based on a somewhat illusory theory that administration of the state's charities by a board of control is founded on sound business principles and that a great saving to the state is to be thereby effected, these very fair-minded persons hastily subscribe to the new doctrine without sufficient reflection as to whether the new polity is really economical and most desirable in the long run for the administration of the state's charities. It may be well to consider carefully the merits and demerits of a system which threatens to abolish an institutional polity that has had the sanction of time and experience and which still is the only recognized form of institutional management in all private charities. With the general acceptance of this principle of state care of all dependents, attention has been directed as never before to the magnitude of the expense involved. This expense was not as noticeable when divided among counties and towns, but when presented in the aggregate in a single lump sum looms up as one of the largest financial burdens that the state has to carry. Central supervision over this expenditure is both logical and necessary. The principle of centralization in business management is sound and there is no reason why a state in the direction of its charities should not be guided to a certain extent by the same economic considerations that prevail in the business world. At the same time there is a difference in the final purposes of a large business organization like the Standard Oil or the U. S. Steel Corporation, whose sole ambition is financial return to stockholders, and the charities of a state, whose chief mission is the alleviation of human suffering. In the attempt to centralize the management of all state charitable institutions there is a real danger that the original mission of these charities may be sacrificed to an arbitrary and mechanical business theory. Economic administration of the state's charities is only one side of the equation. As at present constituted, boards of control attempt a double service for the state,—fiscal supervision and administrative control of the institutions. These two functions, although closely related, need not necessarily be imposed upon the same board. While the steadily increasing cost of maintenance renders fiscal supervision by the state necessary, it does not follow that administration of the institutions can be more economically or more satisfactorily conducted by central boards of control than by carefully selected unpaid boards of trustees.

In the management of the state's charitable institutions we find then that fiscal supervision and administrative control are the two desiderata. The problem is to so correlate these two phases of institutional polity that the best interests of the wards of the state may be conserved with the least possible expense to the state. In the new system of centralization the fulfilment of this double obligation is placed upon the board of control. The wisdom of this course is questionable. While centralization may be desirable in the control of expenditures and possibly in the purchase of supplies, its application to the administrative detail of the institutions may be unfortunate.

With certain slight differences in the various Western states, boards of control as originally devised were composed of three members, with salaries of $3500 each, or thereabout. These boards appointed the superintendents and purchasing agents for the institutions, and assumed the administrative and advisory functions that formerly belonged to the trustees. These boards had exclusive control over the finances and management of the penal and charitable institutions of the states. In many states local boards of visitors were appointed without pay except for traveling expenses, a sort of concession for the removal of the trustees. Women were represented on the board of visitors. It is significant, however, that these visitors are not responsible for the management of the institution, practically have no authority and naturally lack initiative. These visitors are practically figure heads, replacing the former trustees. The distinguishing characteristics of the new system are the central government of the institutions in both their physical and financial aspects, the divorce of the business and medical management of the hospital, and the obliteration of the individuality of the several institutions.

With presumably economical intention many modifications of this original scheme have appeared without, however, increasing the efficiency. In New Hampshire a board of control has been appointed with the purchasing agent as a member. This purchasing agent receives a substantial salary and devotes his entire time to the work, while the other members receive a *per diem* remuneration and devote such time as in their judgment seems advisable. Modifications of the original plan in the interest of economy are questionable. It would seem advisable that if management by a board of control is adopted the members of the board should devote their entire time to the work, even though the expense is larger.

In still another state the following rather complicated plan has been proposed which would certainly have the merit of providing many salaried officials with positions involving large expense. This plan provides a central board consisting of five members with salaries of $1000 each, whose functions are general and advisory. The central board appoints a director. This director must command a large salary, for he is endowed with vast powers, including the appointment of four assistant executive secretaries with large salaries, a business agent, the superintendents of the several institutions, as well as supervision and control over everything pertaining to the administrative and financial affairs of the hospitals, including all new construction. Under the director the four executive secretaries come into immediate contact with the details of the institutions, in a way replacing the former unpaid trustees. The business agent executes the orders of the director and appoints a purchasing agent, with offices, clerical force, and facilities for purchasing and storing supplies. Last, is an unpaid board of visitors, who have no authority except that of listening to complaints, which they cannot correct personally, but may report to the central board. This somewhat involved plan provides control galore. First a central board, second a director, third four executive secretaries, fourth a business agent, and fifth a purchasing agent with expensive offices, clerical force and storehouses. This plan, much more complicated than any previous method, is the latest academic creation of the professional efficiency expert. It is difficult to see how either efficiency or economy can be secured through such a complex and expensive organization. Whatever modifications of the original plan of centralized control may have been adopted, the ultimate purpose has been the withdrawal of local management from the institutions and the substitution of a central board with plenary, fiscal, and administrative power. Assuming that these two functions can be separated, what are the objections to administrative management of state institutions by a central board? First, too many and varied duties are imposed upon a single board. It is questionable whether three or even five officials at a central office can be of as great service to the charitable and penal institutions as local boards of trustees in close touch with individual institutions. The amount of time which a central board can give to the administrative details of many institutions of diverse character, situated in widely separated localities, must of necessity be quite limited. The problems vary greatly in the different institutions. Those of the feeble-minded schools are not identical with those of the insane hospitals. Even the institutions for the insane differ among themselves. The hospitals for the acute, the chronic, and the criminal insane present peculiar and special problems, whose solution demands more time than a single central board has at its command. Neither can these special questions be satisfactorily settled by a board of visitors upon whom rests no final responsibility. What incentive or satisfaction can a board of visitors experience who feel they have no responsibility and who do not know that their suggestions or advice will be heeded by the real managers?

Second, lack of sympathy between the central board and the various hospitals. Successful administration of hospitals and charitable institutions depends directly on the active sympathy and personal interest of their boards of managers. Such interest can only be secured by intimate personal contact, frequent visitation, and close familiarity with the inner working of the hospital, and acquaintance with the actual needs of the patients. Weekly conferences at some central office between the superintendents and the board of control are not as helpful and stimulating to the superintendent as were the frequent visitations of the trustees and their meetings at the hospital, with free opportunity for consultation and helpful suggestion. A central board of control, with many duties and numerous widely separated institutions for visitation and supervision, must give brief and perfunctory service to each. The very fact that it is physically impossible for the board to give the necessary time to the several hospitals renders the service mechanical, and deprives the superintendent of the advice and consultation he so much needs. It is doubtful whether a board of control, visiting many institutions, can ever be in as close sympathy with the work of any particular institution as a local board of trustees who are devoting their time to the service of that institution alone.

Third, the elimination of women from any participation in the management of the hospitals. The principle is now firmly established that women should be represented on the boards of managers of any institution caring for women and children. Whether it is because members of boards of control are really political appointees, or because women are not supposed to be equal to the larger duties attaching to this service, it is significant that whenever trustees of state hospitals have been replaced by a central board of control, women have not been represented in the new management. In some states women have been relegated to the inconsequential boards of visitors, which really means that they have been removed from all actual participation in the activities of the hospitals.

Fourth, the possibility of politics entering the management of state charities. Under this system, the danger is always imminent that partisan political preference may determine the personnel of the official board directing the state's charities. Government of state institutions by boards of trustees possessed this one great merit, that the men and women composing these boards were selected solely because of their fitness, without any reference to their political affiliations. General fitness and adaptability for the work and not political patronage should determine the selection of men for these positions. It is willingly conceded that most excellent men have been and still are being appointed on these boards of control, but the possibility that political considerations may at any time influence their selection is a menace. State charities should be as free from political interference as private charities. Fifth, the principle that the medical administration must be separate and distinct from the business administration, is not sound in theory nor beneficent in practice. In institutions ministering to human illness or defect the medical and the business relations are so intimate that complete separation is not possible without defeat or impairment of the very work for which these institutions stand. Any plan that seeks the divorce of the medical from the business administration is in danger of commercializing charity. The state hospitals for the past twenty-five years have been steadily assimilating the true hospital spirit. Treatment has been assuming greater prominence. The old almshouse treatment of insanity, based on economy carried to parsimony, has well nigh disappeared. The state hospitals have entirely reformed these obsolete methods. Trained nursing, carefully prepared dietaries, study of individual cases with proper treatment, both medicinal, psycho-therapeutic, and hydropathic, industrial employment, pathological research, prophylaxis, field work, and after-care all enter into the work of the hospitals, and are all essential medical questions. Any attempt to isolate and withdraw these activities from the business administration of the hospital is impossible. The general hospitals have long since demonstrated that the medical and the business administration cannot be separated without detriment to the usefulness of the hospital. From this let it not be argued that extravagance will follow, nor that it is desirable or necessary. The real problem is, how the business and the medical administrations may be correlated, and some workable plan devised by which the mission of the hospitals may be efficiently and economically realized.

It is not absolutely certain that central purchasing by a single purchasing agent is as economical as local purchasing by the institutions under competitive bids with central fiscal supervision and audit. The purchasing of supplies for a hospital is not identical with the purchase of supplies for a large railway or mercantile corporation. The character of many of the goods used in hospitals, the danger of deterioration, and the expense of central storage and distribution render the economy of this method doubtful. Such plan can only be economical in large states with many institutions of a single class, and even then is of doubtful value.

In his exhaustive analysis of the "Methods of Fiscal Control of State Institutions" made for the State Charities Aid Association of New York State, Henry C. Wright finds that of the three methods of supervision studied, namely, those of New York, Iowa, and Indiana, the greater saving was in Indiana, in which state the institutions are managed by local boards of trustees under the supervision of a state board of charities. "The larger costs noted in connection with New York and Iowa are, in large measure, the cost of supervision of details of the administration of the institutions, which, in Indiana, remains in the hands of the superintendents of the institutions. These details are handled as satisfactorily by the superintendents in Indiana as by the central supervising officers in New York and Iowa." Undoubtedly in this statement lies the exact truth,—any theoretical saving by central administration is more than offset by the increased expense of maintaining the system.

There is no reason why, under a well-devised plan of coöperative and competitive buying, the institutions cannot purchase goods of the same quality as economically as a central purchasing agent. It is easily possible for a man, intent on buying only the cheapest goods, and unfamiliar with institutional requirements, to purchase inferior articles, the attempted use of which will cripple the efficiency of the institution. In a hospital the judgment of an experienced medical superintendent may be wiser than that of a lay buyer, unfamiliar with the real needs of the institution. On this point Mr. Wright says: "It seems difficult for the fiscal supervisor to bear in mind that the primary function of the institutions under his charge is, where possible, to heal and reform. There is a mass of evidence which will make it appear that his first concern is for small economies rather than for efficiency in operation."

In those states where boards of control have been or are about to be established, many of the evils of such a system can be forestalled by having at least one woman on the board, by holding stated meetings of the board at the various institutions at least once a month, by making the purchasing agent, where such an official exists, an agent and not a member of the board, and by legislation requiring the board to give their entire time to the work, with such remuneration as will secure an able and efficient personnel. Merit and experience, and not partisan political influence should determine the selection of the membership. The presence of a woman on a board of managers having the custody of women inmates in various institutions is most desirable. In countless administrative matters her experience and point of view may prove most helpful. Her active presence in meetings would contribute greatly toward removing the charge and danger of political bias. By holding regular monthly meetings at the institutions, the board comes into more intimate and personal relations with the institutions and their work than when board meetings are held at a central place, as the State House. The management of the institutions in consultation with the board of control, and not the purchasing agent, should standardize and determine the selection of goods, not an independent buyer whose sole aim may be price, not quality, and who personally may be quite unfamiliar with the actual needs of the institution.

In Maryland a most admirable system of coöperative buying has been adopted in the state institutions. According to this plan the hospitals have a central bureau, to which all requisitions are sent at stated times. All institutional supplies are standardized and samples are on exhibition at this office. From this office advertisements for proposals are sent out and contracts signed with the lowest bidders. Little expense is entailed under this method, and the institutions secure the class of goods they require at the lowest possible cost.

The peril that at the present time menaces state care of the insane is excess of control. The institutions and the officers who manage them may become so hampered by petty supervision as to lose efficiency in operation and management. Just as the overtrained athlete loses his spirit and his nerve at the crucial moment, so will the hospitals under excess of control forfeit the true hospital spirit and the initiative that formerly prevailed. There is danger that they will become mere receptacles for housing and feeding large numbers of inmates without showing any very great financial saving for the state, thereby losing sight of the scientific and therapeutic aims for which these institutions stand.

After all why is this expensive machinery of control necessary, unless to provide many more high-salaried officials? Mr. Wright in his report with great justice states that what the institutions and the superintendents most need is advice of experts, uniformity of accounting and reporting, and standardization, as far as is possible, of all hospital supplies. The securing of these considerations does not require complicated and expensive supervisory boards. What is really needed is central fiscal supervision, with as large a degree of local independence as is necessary to secure efficiency and economy.

Mr. Wright's recommendations contain much that will appeal to the trained institutional worker. A central supervising board, serving without pay, and having "function of inspection, recommendation, and advice, combined with a partial power of control." This board to have as salaried secretary a man of "marked ability," and familiar with institution requirements, and also empowered to employ experts, as they may be needed to give advice on all matters pertaining to the life and well-being of the institutions. Boards of managers with women representatives appointed for each institution by the governor. Advisory relations to exist between the supervising board and the managers. Stated conferences between the superintendents and the managers. Joint purchasing of supplies with such expert advice and laboratory tests as the supervising board may deem necessary. Under some such general scheme the state will maintain control over all expenditures, its interest in and direction of its charities will be attained with the smallest possible outlay. Individual civic responsibility to the state will be secured through volunteer workers. Public charities and correction will not be imperilled by partisan political interests. Efficiency, economy, continuity, and permanence of service will characterize the management of our state institutions.

* * *

THE PRE-OPERATIVE DIAGNOSIS OF TUBERCULAR MESENTERIC AND RETROPERITONEAL GLANDS.

By Edw. H. Risley, M.D., F.A.C.S., Boston,

Assistant Surgeon to Out-Patients, Massachusetts General Hospital.

With the advent of greater perfection in the technic of the Roentgen ray examination and diagnosis of abdominal conditions there is still felt the need of greater refinement of diagnosis of the acute conditions, especially of the right lower quadrant.

The clinical investigation undertaken in this paper was stimulated by the recent occurrence in the author's practice of several cases strongly simulating appendicitis and distinctly of the operative type, but which on opening the abdomen, were found to be what I think we can properly term the acute fulminating type of retroperitoneal or mesenteric adenitis of tubercular origin.

The attempt is made in this paper through the analysis of a series of autopsy and clinical records to throw some additional light on the preoperative diagnosis of this condition,—primary retroperitoneal and mesenteric tubercular adenitis.

The type of this disease, which is secondary to general or intestinal tuberculosis, is not considered in this paper, but only that type which has recently come to be recognized as a definite and separate clinical entity, but which so often simulates and is mistaken for the acute conditions occurring in the right lower quadrant of the abdomen.

This type of case occurs quite frequently in both private and hospital practice, especially in children and young adults.

Clinical surgical experience shows that there are certain cases which present a definite picture of an acute right lower quadrant condition, most often simulating appendicitis, which on operation show a normal or slightly congested appendix and no other pathology than masses of retroperitoneal glands in various stages of enlargement and in which no other tubercular foci can be found anywhere in the body on most careful examination.

These isolated glands or groups of glands may occur anywhere in the mesentery, but are most commonly found in the ileo-cecal region.

Corner, who seems to have had considerable experience with this class of case, and to whose papers many references are made in the literature, thinks that there is a physiologic reason for this location in the comparative stasis of the products of digestion in a mildly alkaline medium at this site; a condition which favors the passage of tubercle bacilli through the intact mucous membrane of the bowel.

Corner also believes that tuberculous mesenteric glands are to be found in practically every child in which an abdominal operation is necessary. This great frequency and the fact that glandular (non-tubercular) enlargement is so common in other regions of the body in children coincident with any pathologic condition, makes the raising of the question of the tubercular nature of these glands in children a pointed one.

There are many reported instances in which the removal of an apparently normal or only slightly congested appendix was followed by the subsidence of all symptoms and even by the disappearance of glandular enlargements. And whether we grant that this mesenteric adenitis, in very young children, is of tubercular origin or whether it be a simple adenitis so common in all inflammatory or other conditions in young children, the facts still remain that this type of disease often does produce a chain of acute right lower abdominal symptoms of such a type as generally to demand surgical intervention. It seems arguable to the writer that as these glands are so commonly found in many conditions in young children, for which the abdomen is opened, and as these children ultimately go on to complete recovery from their surgical condition and do not suffer in the future from further enlargement of these glands, therefore we may believe that a mesenteric adenitis is a common condition in children, from which they recover spontaneously, also from which it is the exception rather than the rule to have symptoms; that these are probably more likely to be of inflammatory than tubercular origin and from which they may be expected to recover without further morbidity.

When we discuss this condition in adults, however, it seems reasonable to suppose that glands which have persisted since childhood or have developed recently are much more likely to be tubercular in origin and that in them we may expect the clinical picture described in this paper.

Corner believes that milk and the bovine type of tubercle bacilli are the primary factors in the causation of this disease, and when the condition is in an advanced stage and there are many glands in the lymphatic chain Talbot has shown how the absorption of fat may be prevented by the blocking of the lymphatics by these glandular masses.

Three or four pertinent questions arise in the diagnosis and treatment of this class of case.

1. If the history, past and present, and the physical signs are carefully gone over, is there not a symptom-complex or certain more or less distinctive picture by which we can more accurately make the preoperative diagnosis?
2. How can this condition be differentiated from appendicitis?
3. What is the prognosis? With operation? Without operation?

A brief review of the essential facts to be noted in this type of infection is as follows:—

1. The disease is extremely common in infancy and childhood, but by no means confined to this period, being nearly as common in young adults. In fact, the highest percentage favors the years between 6 and 18. It is not uncommon in persons up to 40 years of age. One case in this series was 58 years old, but occurrence at such a late age is extremely rare.

2. Corner's attempt to divide the condition into an adult anatomical type which occurs in the region of the cecum and gives pain in the stage of caseation, usually diagnosed as appendicitis without palpable tumor, and a type peculiar to young children in which there are palpable glands usually in the free mesenteric edge of the small intestine, we believe should not be made, as numerous cases in this series and those reported by other writers show no difference in type assignable to age; both types being found in the very young and in the adult.

3. Two clinical types, however, are noticeable:

(*a*) Distinctly palpable masses of glands accompanied by none or only vague abdominal symptoms.

(*b*) Cases with alarming abdominal symptoms and signs developing suddenly when there are no palpable glands demonstrable.

It is a notable fact that unless the glands are sufficiently enlarged to form palpable masses there are probably no symptoms present which would suggest a tubercular infection, while when there are pronounced symptoms such as diarrhea, night sweats, temperature, etc., it is probable that there are other tubercular foci elsewhere in the body which are causing this train of symptoms and that they cannot be referable alone to the mesenteric involvement. On the other hand, primary mesenteric glandular tuberculosis may be the only underlying cause of a train of sudden acute right lower quadrant symptoms demanding surgical relief. For this reason the diagnosis is often difficult or impossible.

Symptoms:—

(*a*) There may be none; even in the presence of palpable masses of gland.

(*b*) The condition may be discovered only at operation for some other condition; the glands being too small for palpation through the abdominal wall.

(*c*) Trivial symptoms such as fleeting and not severe right-sided or general abdominal pain with or without disturbance of digestion and bowel regularity, the general health being good or the patient being of the pale rather "sickly" type.

(*d*) More or less constant fairly well localized abdominal pain with generally a "soreness" referable to the region of the cecum; the most likely situation of the growth. Physical examination may or may not show the presence of resistance or an ill-defined glandular mass.

(*e*) Sudden (or gradual) onset of general, then localized abdominal pain confined to the right lower quadrant, rise in temperature up to 99, 100 or 101°, nausea and vomiting, constipation or diarrhea, and on physical examination, acute localized tenderness with spasm and resistance, a white count up to 12 or 15 thousand, and a very sick appearance. There may be distention, complete obstipation, severe vomiting and all the signs of obstruction. (This latter, however, is rarely present unless there is a real obstruction, which is due to extension of the tubercular process matting and binding intestines together.)

That the process is sometimes a fulminating one and that the glandular enlargement sometimes precedes a general tubercular peritonitis and may be cured by operation is shown in the following case of this series.

L. L. H., 9 years old, had lived in a country district, had had much out-of-doors' life, but had never been very robust. He was pale but considered healthy. He had had no previous illness. He was taken suddenly 48 hours before seen by the writer with sudden general abdominal pain, nausea and a few watery bowel movements followed by constipation. Castor oil, given by the local doctor, was vomited; the patient looked sick and had a slight fever. As no improvement took place in 48 hours he was transferred to the writer's care.

P. E. showed distended abdomen, general abdominal tenderness, no masses. Temp. 101°, W. C. 9000. A diagnosis of intestinal obstruction, probably due to intussusception, was made. At operation the lower ileum was found adherent to the side of the ascending colon near the cecum, and to a large ulcerated T.B. gland in the mesentery. Several smaller glands were found in the adjacent mesentery. Exploration of the rest of the abdomen failed to show any other pathology. The peritoneum was smooth and not injected. The convalescence progressed satisfactorily but slowly till the 11th day, when signs of further intestinal obstruction developed and the abdomen was again opened and a few fresh adhesions freed, and to the great surprise of the operator and his assistants the whole peritoneum, both parietal and visceral, was found to be thickly studded with tubercles, several of which were excised and reported to be tuberculous. The convalescence from that time was uneventful. The patient has been seen four times since at intervals of a year apart, has gained in weight, there are no masses or fluid present. This case is of unusual interest in that the development of the tubercles took place so rapidly after the first operation. The patient has at present a hernia in scar, for which it is hoped he will seek operation later. The final condition of the abdomen can then be recorded.

It is evident, therefore, that we have in tabes mesenterica a condition which, like appendicitis, the lesion with which it is most often confused, has a variety of symptoms and signs, none of them distinctive in themselves and from the analysis of which we are seldom able to make an exact preoperative diagnosis.

If the patient is pale and "sickly," has had more or less localized right-sided abdominal pain and has a low fever and white count with palpable glands and is a child or young adult, the diagnosis is easy, the picture being clear. But in the absence of palpable glands and with an acute onset with high fever and white count the condition is naturally diagnosed as appendicitis.

With the idea of perhaps shedding some light on the question, especially of symptomatology and past history in these cases all the autopsy records of the Massachusetts General Hospital have been gone over and these cases analyzed from a pathological as well as from a clinical point of view.

In 65 cases in which one or more retroperitoneal or mesenteric obsolete or active tubercular glands were found at autopsy, the clinical record of each case was looked up, especially from the point of view of past history, previous health, and attacks of abdominal pain. And in so far as hospital records show or are of value in determining this point, none of these 65 cases had anything in their past history which could be interpreted as referable to the presence of tuberculous retro-peritoneal or mesenteric glands.

These cases of course do not include those cases operated on for this condition, but only cases in which a diagnosis was *not* made before death, and one or more glands were found incidental to other conditions at autopsy. This seems to indicate that very many people harbor obsolete or quiescent tubercular glands of even considerable size without ever having any symptoms referable to them.

This is well illustrated by the fact that in 4 cases the glands were adherent to the intestines, in 3 there was ulceration present, in 5 there were great numbers of glands and in 5 masses the size of the fist or larger were present, and yet no symptoms resulted.

These masses are variously described by the pathologist as follows: Obsolete tubercular mesenteric glands, large masses of obsolete tubercular glands adherent to wall of the intestine, many retroperitoneal glands along the wall of the aorta, mass size of an egg caseous and calcareous, soft tubercular mesenteric glands, adherent tubercular nodes in the mesentery, retroperitoneal and in the omentum, soft and caseous glands, slightly ulcerated at base, large fibroid calcareous mass near the cecal valve; and yet no symptoms could be found in the past or present history referable to these masses, the patients dying of such conditions as broken compensation, pneumonia, typhoid, brain abscess, septicemia, glioma of brain, aortic regurgitation, pyonephrosis, appendicitis, empyema, etc.

It is fortunate that there is never much question as to the treatment in the acute cases. The condition is an acute adominal one and demands surgical relief.

Adhesions may be found with true ileus, ulcerated or necrotic glandular masses may demand removal or drainage, or large masses of glands producing pain may also demand removal. This latter circumstance is well illustrated by a case reported by Newbott in which appendicitis was diagnosed but only a few calcareous glands found in the mesentery of the lower ileum at operation. These were not disturbed, the appendix only being removed. After operation the patient complained of the same pain as before operation; six months later the abdomen was reopened and the glands removed, with prompt relief of symptoms.

The indication seems, therefore, to be for the removal, in the absence of other pathology, of plainly palpable glands which evidently cause symptoms.

In view of the fact that cases of tubercular mesenteric adenitis get well from the mere opening of the abdomen, as tubercular peritonitis cases recover after the same procedure, and that this is the testimony of many surgeons seeing numbers of these cases, it seems reasonable to state that when there is no indication for drainage and the masses do not readily lend themselves to enucleation, good results may be expected from non-interference and proper after-care.

The much mooted question of why cases of tubercular peritonitis so often recover after simple exploratory laparotomy, seems to find its answer in this type of case. We have learned the pathology by our exploratory operation. The patient is then put under the best hygienic conditions to combat his tubercular tendency, he has proper care, his symptom responds to treatment and he overcomes an infection which in many people lies dormant for years without causing symptoms at all. It is not the fact that the abdomen has been opened to fresh air or sunlight that effects a cure, but the fact that the patient from then on has proper care, based on an accurate diagnosis.

An analysis of 30 cases operated on at the Massachusetts General Hospital for some more or less acute abdominal condition, and in which definite mesenteric or retroperitoneal glands were found at operation, show some points of value.

There were only 3 cases in which the glands were retroperitoneal, the mesentery about the cecum being the common situation.

It is interesting to note and pertinent to the purpose of this paper that in only 3 of these 30 cases was the diagnosis of tabes mesenterica made previous to operation.

Other preoperative diagnoses were: appendicitis 10 cases, ileus 3 cases, abdominal tumor 4 cases, pelvic 3 cases, while in the remaining 7 cases the record does not state what diagnosis was made, but as symptoms and physical examinations were described it is evident that the appendix was the organ suspected. In the 30 cases the tuberculous glands were found to be undoubtedly the cause of the symptoms complained of in 17, or a little over half of the cases; in 4 cases it was an open question as to whether they alone could have caused the symptoms, although it was probable, because of their enlarged condition, that they must have been a contributing factor; while in the remaining 9 cases they were small in size and were undoubtedly only secondary to other coincident and more pronounced lesions.

When we try to gather information which will aid in making a correct preoperative diagnosis we are not greatly helped, for only symptoms commonly complained of by those suffering from chronic or recurrent appendicitis are obtainable. For instance, 13 cases had previous similar attacks; of these 8 had general abdominal pain, while 13 (or all the cases) had localized pain either in the previous or present attack.

Of course the physical sign which would be of most value in making a differential diagnosis would be the presence of palpable masses. In 12 cases such masses were demonstrable before operation and in 3 others were discovered when the abdominal wall was relaxed under ether before operation. In 12 cases the history definitely states that no masses were to be palpated. It is here of interest to note that in spite of the fact that masses were palpable in these 12 cases, yet the diagnosis of tabes mesenterica was made in only 3. The masses generally being diagnosed as, abdominal tumor in 4 cases, appendix abscess, pus tubes and in one case floating kidney. This fact certainly shows that unless distinct chains of glands are to be felt, the history is not distinctive enough to suggest a condition of tabes in preference to some more common condition.

The rapidity with which such a process may develop is illustrated by a case in which an appendectomy was done in 1910 and no glands were noticed, although the abdomen was thoroughly explored in routine. In 1913 the case was operated for acute intestinal obstruction and a mass of matted tubercular glands found binding the intestines together. The case recovered. The recurrence of other extra-abdominal tubercular glands coincident with the mesenteric glands seems to be rare. In two cases of this series, glands were present in the neck and groins.

In no case did the white blood count exceed 15,000 except in one in which there was a coincident appendicitis and pelvic abscess. We can, therefore, expect little aid in diagnosis from the blood count.

Operative methods employed have been as follows: Exploratory laparotomy only, recovery one case; 7 cases were curetted and drained; in four cases the masses were too extensive for any operative removal. In two cases the glands were shelled out. The remaining glands were too small or inaccessible or considered too far removed as a cause of symptoms to warrant attempts at removal.

The mortality in this series was 2 cases, or 15%, both cases dying from postoperative pneumonia and not as a result of extension of the process or general miliary tuberculosis.

Two cases were discharged from the hospital with a sinus, but others which were opened and drained, curetted or swabbed out with iodine, completely healed and now show no sinus. In these 30 cases, five have been complete recoveries. In four there is some mass still present, but the patients have no symptoms. Two cases have had similar attacks since operation but consider themselves well. The remaining cases have failed to report up to the present time.

SUMMARY AND CONCLUSIONS.

1. Tabes mesenterica is often a primary disease with sometimes a fairly distinct clinical history and signs. It most often simulates acute appendicitis, and when in this stage should demand surgical intervention.
2. In the absence of palpable glands, however, it is impossible to make a correct preoperative diagnosis in many cases, there being no symptom-complex distinctive enough of this condition.
3. A great many people harbor tubercular mesenteric glands in various stages of activity without symptoms.
4. The disease has two clinical types: (*a*) a slowly progressing one, generally with palpable glands; (*b*) an acute fulminating type, most often simulating and impossible generally to differentiate from appendicitis.
5. The prognosis in the subacute stage is good without operation. In the acute stage exploratory laparotomy should be done, but the glands not removed unless there are definite indications either from adhesions, ulceration or size of mass producing pain or mechanical obstruction.
6. In children and young adults with a history of right-sided abdominal pain, with or without palpable masses, tabes mesenterica should always be considered as a possibility.

I wish here to express my thanks to the surgical staff of the Massachusetts General Hospital for permission to analyze the records of cases operated on in looking up this subject.

BIBLIOGRAPHY.

Corner: Trans. Med. Soc., Lond., v, 29, p. 402; Lancet, Feb. 17, 1912, p. 426.
Corner and Battle: Surgery of Diseases of the Appendix.
Corner: Lancet, Dec. 23, 1905.
Newbott: Brit. Med. Jour., Oct. 28, 1911, p. 1101.
Parker and Lund: BOSTON MED. AND SURG. JOUR., Dec. 26, 1912.
Talbot: Am. Jour. of Diseases of Children, July, 1912.

A LOCALIZED, SUBACUTE FORM OF BRONCHO-PNEUMONIA.

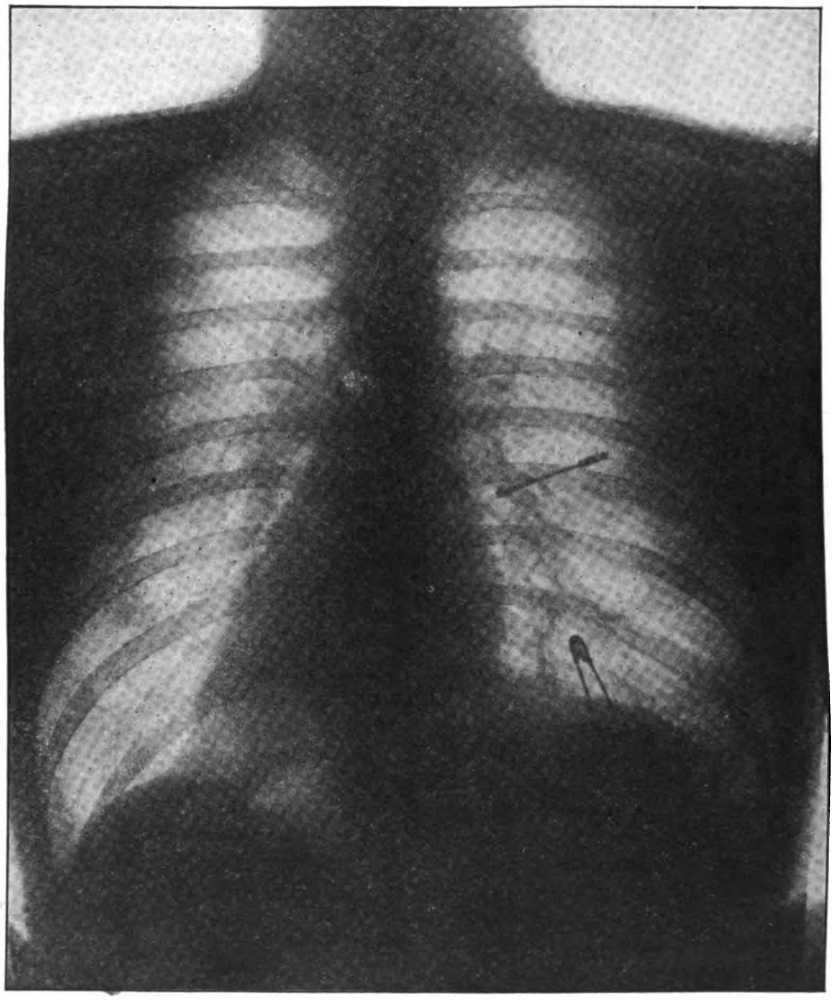
BY RALPH C. LARRABEE, M.D., BOSTON.

W. J. P., a male nurse, age 46, was admitted to the City Hospital on August 4, 1913. He had always been well. About ten or fifteen days before admission he began to cough; this symptom being at first mild, and later only moderately severe. The expectoration was abundant and was stated to have shown slight streaking with blood before admission. He had no pain and was just about sick enough to stay in bed. He stated that, before entering the hospital, his temperature had been as high as 102.2°, but the highest record thereafter was 100°. It ran a low, irregular course and did not remain normal till after the thirteenth day in the hospital, its total duration being three or four weeks. There was nothing like a crisis.

In the lower half of the right back there were numerous, coarse, moist râles. At first there was no dulness and no change in the voice or breathing sounds. Later the râles became finer, and there was more or less dulness and diminution of sounds. Consolidation was never recognizable by physical examination.

The leucocytes were 24,200 on admission, later counts being 19,800, 10,000, 9,600, 11,500 and 15,200, the two latter being obtained after convalescence appeared to be well under way. The x-ray showed a slight, but definite shadow in the lower, outer portion of the right lung, occupying in the plate merely the corner of the lung outside the swell of the diaphragm. There was also some increase in the intensity of the markings, usually considered to be due to the blood vessels or bronchi.

The sputum was examined for influenza bacilli and several times for tubercle bacilli, always with negative results.



W. P. Age 46.

Broncho-pneumonia at right base. The normal markings in the lung are somewhat exaggerated. There is a distinct shadow just outside the swell of the diaphragm.

The patient improved very slowly. The physical signs cleared up gradually, examination being recorded as negative about one month after admission. The total duration of illness, from onset to discharge from the hospital was 58 days.

This case is reported at length as it represents a type which, though very common, has received little notice in medical literature. I have seen a good many such cases in the past few years. This paper is based on a study of seventeen seen in the wards of the Boston City Hospital and in private practice. Perhaps as many more were seen in the out-patient department of the hospital, but these were not included, nor were cases seen but once in private practice or in consultation. The condition may be described briefly as a pulmonary infection, localized in the lower portion of one lung and characterized clinically by lack of definite consolidation, mild course and long duration. Riesman,[1] in 1913, described a series of cases of "A Lobar Form of Broncho-Pneumonia of Long Duration, Occurring in Children and Young Adults." His description corresponds very closely to that of my cases.

About two-thirds of my cases were in males. Their ages varied from ten to seventy-five. In this respect they differ somewhat from Riesman's, which were mostly children and adolescents. Perhaps this is because of the different character of the material making up our respective clinics. My cases occurred at all seasons of the year. I have seen many in the summer. This is in contrast to lobar pneumonia, which is very much more prevalent in winter and early spring.

The onset is usually gradual. Only one of the cases collected in preparing this paper had an initial chill. One other had a chill with a temperature of 102° F., occurring after a "cold" of a week's duration. The notes usually state that the patient "began to cough" or "had a cold." Medical care is usually called for only after the patient has been ill for several days or even two or three weeks. Not uncommonly the patient seeks relief only because the cough and malaise have not cleared up as they usually do after a cold.

The most striking symptom is cough, often severe, bothersome and persistent. Pain was present in but two of my cases. More or less fever is generally present at some stage, though I have seen several cases in which a fairly complete record showed a normal temperature throughout. It may be as high as 103° for a day or two, but the common finding is a low, irregular curve, the daily maximum being 101 or 102°. It varies a good deal in duration, sometimes lasting several weeks, sometimes but a day or two. Recrudescences are common. As might be expected in such curves, the termination is indefinite. I have, however, seen two cases in which the fever was high enough and the termination abrupt enough to constitute a real crisis. But the end of the fever is by no means the end of the disease. Signs and symptoms may persist for weeks or even months after defervescence.

The physical signs are so definite that the nature of the process can generally be recognized at the first examination. One caution is, however, in order. The nature and distribution of the signs are such that unless one is in the habit of making a thorough examination in every office patient or out-patient, with the shirt and corsets removed and the whole chest exposed, they will often be overlooked. Percussion generally shows dulness, low down in one back or axilla, often so slight as to be discoverable only on careful comparison of the two sides. This impairment of resonance usually increases as time goes on, and it may persist after other signs have disappeared. Changes in the voice and breathing are relatively unimportant. The sounds may be increased in intensity at first, and may have to a slight degree the bronchial character that suggests consolidation. Frank consolidation does not occur, or if it does, it is of very limited extent and of very short duration. Later on, both sounds and fremitus are more apt to be decreased.

The most characteristic feature is the râles. They are generally very numerous and easily heard if one listens at the right spot,—most frequently the extreme base. They are very persistent. In character they are coarse or medium, crackling, moist or sticky. With all due allowance for personal variations in the use of descriptive terms applying to râles, I cannot agree with Riesman that they are "consonating"—I think this is very unusual. All these signs are characteristically localized in the lower back or axilla on one side. There may be, for a short time, a few râles at the opposite base or scattered over the lungs, but the most striking feature is the persistent presence of a burst of moist râles at one base.

Satisfactory x-ray plates were obtained in six cases. In two perfectly typical ones the results were negative. In the others definite shadows were present over areas corresponding to the physical signs. The shadows observed have been less intense than in typical lobar pneumonia and even less sharply circumscribed. They have not, as a rule, corresponded in extent with a whole lobe, but have been limited, like the signs, to the lower portion of one lower lobe.

The sputum varies in amount from very slight to very abundant. Blood was present in but two of my seventeen cases,—once for a few days at the onset and once as rare and slight streaking, also in the early days. Tubercle bacilli were sought for in most cases, often repeatedly. Of course no case is included in which the findings were positive.

The leucocytes were counted in thirteen cases. In four the maximum figure was under 10,000, in one between 10,000 and 15,000, in two between 15,000 and 20,000, in four between 20,000 and

25,000, and in two over 25,000. Thus, in the majority of cases there was a leucocytosis corresponding to that of mild lobar pneumonia. In several instances the persistence of the leucocytosis was very striking, it having lasted well into convalescence, after the symptoms and signs had well-nigh disappeared. Persistent leucocytosis, then, is a striking feature.

Blood pressure observations were made in most cases, without striking results except in one instance. This was a man of fifty-eight, whose urine showed albumen and casts for a few days during the height of the disease. The systolic pressure was persistently low—70 to 75 millimeters of mercury. During convalescence it gradually rose, but as late as two months after the onset, long after he had left the hospital, it was recorded as 100.

The duration of cases of this type is indefinite and variable. In my longest case, a boy of ten, localized râles persisted for eight months, and after fourteen months' dulness was still present. In several instances the signs cleared up in a few days. It is not infrequent for the cough and râles to last for six weeks, and dulness with an occasional crackle as much longer.

Diagnosis depends upon the recognition of a localized infection of the lung, physically characterized by slight dulness and numerous moist râles, without frank consolidation, running a mild but protracted course. It may be differentiated from lobar pneumonia by the milder but more persistent course, the low fever, the lack of sudden onset and critical termination and especially by the absence of frank consolidation. Bronchopneumonia of the ordinary sort is usually secondary to other diseases, is commonest in children, is apt to be more severe and is typically bilateral in its distribution. Bronchitis is seldom persistently limited to one lobe, will rarely be accompanied by marked leucocytosis, and will not show dulness to percussion nor changes in the shadow cast by the lung parenchyma on the x-ray plate.

The question of tuberculosis naturally often arises in these cases, particularly when cough, debility and perhaps some loss of weight have persisted for weeks. One of my first cases was recommended to a sanatorium for tuberculosis by one of our best specialists and was accepted by the admitting physician. I found only a burst of râles at one base, and advised delay in the institution of sanatorium treatment—a somewhat risky bit of advice. Under reasonable care her signs and symptoms promptly cleared up, but it was long before she recovered from the emotional shock of that dreaded word, "tuberculosis." It is best to delay the use of that word where symptoms have existed but a few weeks and the signs consist of dulness and a burst of râles at one base.

The prognosis is almost invariably good. In only one of my cases, a feeble old gentleman with advanced arteriosclerosis, was there a moment's anxiety as to the immediate outlook. The disease is usually very mild. Most cases will be confined to bed for at least a few days, some not at all, some will keep at work. It is, however, best not to state the probable duration. Even a strong young man, with slight symptoms and signs, may be incapacitated for weeks.

No form of treatment is likely to produce any astonishing immediate results. The patient should be confined to the bed as long as fever persists, with a reasonable margin of safety. Afebrile cases may be simply confined to the house. I have treated a number as office patients, and as hospital out-patients throughout. In reasonable weather they do best out-of-doors, but here, as in everything else, common-sense must temper enthusiasm. The writer does not believe that any acute pulmonary infection should be exposed regardless to the full rigors of a New England winter. Of course no drug will materially affect the pathologic process; yet sedatives like codeine and expectorants like ammonium chloride will harmlessly lessen the discomforts of a severe cough with scanty tenacious expectoration. In two cases autogenous vaccines were prepared from pneumococci isolated from the patients' sputa. One seemed to be benefited, but of course nothing can be inferred from such a limited experience.

What is the pathology of this condition? It is certainly an infection for it is accompanied by fever and by leucocytosis, and the general picture is obviously that of a bacterial disease. In the cases upon which I have notes, no careful bacterial examinations of the sputum have been made, but observations made in the course of preparing vaccines for two cases have shown a variety of organisms, always including pneumococci. It is distinctly possible that some were influenzal infections. Influenza bacilli were sought for in but one case, and they were not present in that one.

It is not bronchitis, since the presence of dulness, changes in sounds and fremitus, and above all, the x-ray evidence of increased density show involvement of the lung parenchyma. It is not lobar pneumonia, as there is never any evidence of extensive frank consolidation, nor does the clinical course of the disease correspond to that of this condition. Riesman's view that we are dealing with a lobular or catarrhal pneumonia is probably correct. The principal departure from the usual type is that it is confined to one lobe or to a portion of one lobe, and that it runs a milder and frequently a more protracted course.

In one or two cases the patient had cardiac decompensation and the pulmonary condition was apparently an infection of one of the edematous bases. The course, however, apart from the cardiac condition, was not dissimilar to the others except in severity.

In acute infections of the lungs we recognize certain conspicuous types, such as the ordinary forms of broncho- and lobar pneumonia, bronchitis and pleurisy. But we often meet with infections due perhaps to the same organisms, which we cannot classify under these headings. In the writer's opinion the class of cases to which this paper has reference constitutes a sufficiently definite type to deserve a pigeon-hole of its own.

---

[1] Riesman: Amer. Jour. of Medical Sciences, 1913, cxlvi, 313.

◆

THE FIELD FOR LOCAL ANESTHESIA AND OF SPINAL ANESTHESIA IN GENITO-URINARY SURGERY.

By Arthur Hallam Crosbie, M.D., Boston.

During my present service at the Boston Dispensary the importance of local anesthesia has been brought to my attention with such force that I feel that it is worth while to speak of some of its uses. Probably many others here are using it as much, but there may be many like myself who have hitherto neglected its use to the fullest extent in out-patient clinics.

The matter was especially brought to my notice by Dr. Rosenkrantz of Los Angeles who had just returned from three years' study and practice in Germany and Servia. He was shown several cases of epididymotomy that we had done for acute epididymitis. These cases had been done under ether either at the patients' homes or at a hospital. I was deploring the fact that we had many such cases that should be operated upon, but they could not go to a hospital nor could they have it done at home. He suggested doing the operation in the clinic under local anesthesia, although he had not seen it done. I felt that it was too much of an operation for an out-patient clinic. Very soon, however, I operated upon two cases of acute epididymitis, using a 2% solution of novocaine, to which had been added a small amount of adrenaline. The results were so good that now Dr. Augustus Riley and I do even the most acute cases under it. We use from 20 to 30 c.c. of a .5% to 2% solution of novocaine to which are added from 3 to 6 drops of adrenal solution 1-1000. We use usually 1% novocaine as it seems to give just as good anesthesia as 2%, especially when used with adrenal solution.

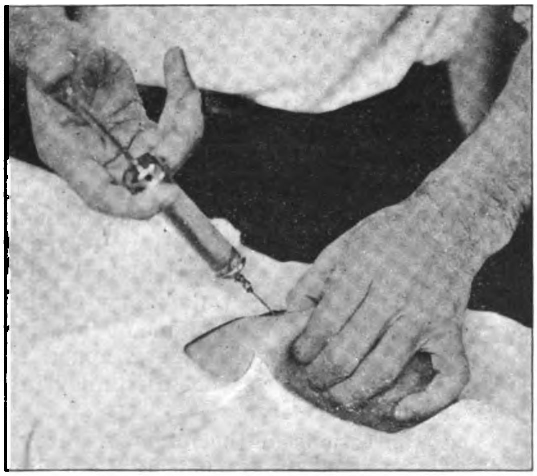


Fig. 1.—Infiltrating the cord.

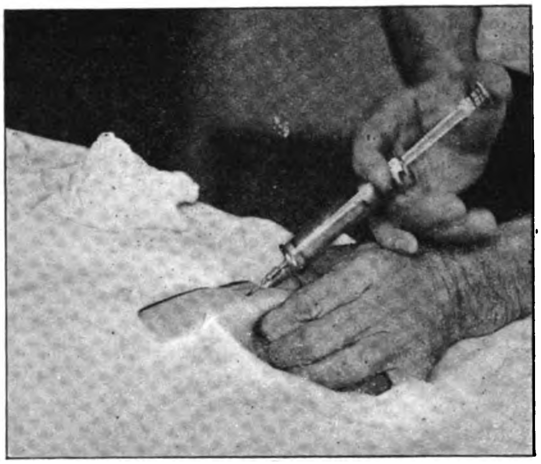


Fig. 2.—The needle inserted into the inguinal canal.

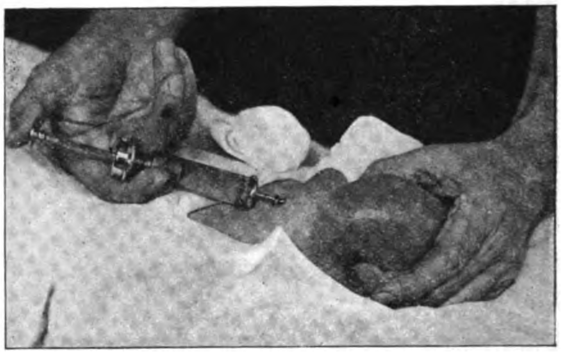


Fig. 3.—Injecting the region about the globus major.

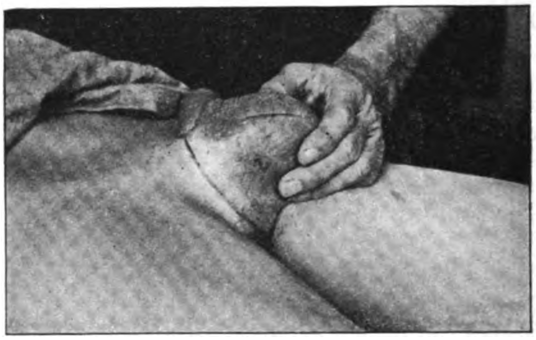


Fig. 4.—The line for circuminjecting the cord and the line of incision.

The method we use is much the same as Braun, in his recent book on local anesthesia, advocates for any operation on the testes. The best syringe is a 10 c.c. glass syringe with a two-inch needle. The first step is to infiltrate the cord. This is done by grasping the cord, at the point where it emerges from the external ring, between the thumb and forefinger of the left hand. From 5 to 10 c.c. of solution is injected in all directions into the cord in order to be sure to block all the nerves in the cord. It is well also to inject a little into the inguinal canal itself. This is done to get complete blocking. The needle is then pushed downward along the cord to the region of the globus major and a little more solution injected. The scrotum is then circum-injected, on the side to be operated on, all the way to the perineum. This injection is made where the scrotal skin merges with the skin of the thigh. Even though the operation be unilateral, Braun recommends anesthetizing the scrotal skin all the way around, the same as one would for a double operation. We have not found this necessary as we get complete anesthesia by injecting the one side. Finally, a little novocaine is injected into the skin along the line of incision. In order to get perfect anesthesia it is well to wait ten or fifteen minutes. With the anesthesia thus obtained any operation may be done on the scrotum or testicle without pain. We have found that patients having an epididymotomy done under this form of anesthesia are able to walk out after the operation in comparative comfort. Such patients report back to the clinic for dressings.

The above method is suitable for epididymotomies, resecting spermatoceles and hydroceles. It would work well for varicoceles, but we do not use it in the out-patient clinic because of the danger of local bleeding. A patient after a varicocele operation should remain in bed for a few days.

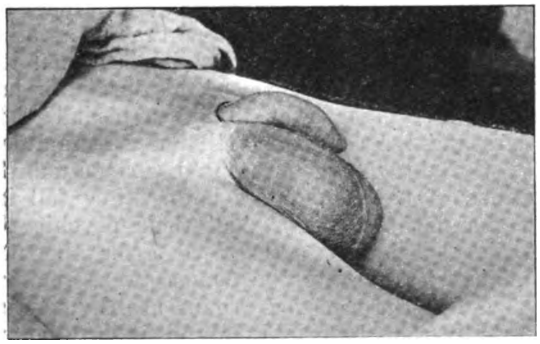


FIG. 5.—The line for injection in circumcision.

A modification of this form of anesthesia works excellently for circumcision. The method is much the same, a ring is infiltrated about the base of the penis close to the pubes. A little novocain is injected into the corpora cavernosa as well. This gives complete anesthesia of the whole penis, so that any operation, such as circumcision, cutting strictures of the anterior urethra, operations for phimosis and paraphimosis or even amputation of the penis can be done without pain. I find this method of especial advantage in doing circumcision, because in the old way of infiltrating the prepuce I was seldom able to get complete anesthesia and the infiltration rendered the parts worked upon very edematous, which was a great disadvantage.

For anesthetizing the urethra for cystoscopic work or cutting anterior strictures we have been using a 4% solution of alypin with very good results. We use as much as necessary to get complete anesthesia and have had no toxic symptoms from its use. It is injected into the urethra with an Ultzmann syringe and held in from five to ten minutes. For cutting anterior strictures some people use the alypin made up with a soluble lubricant, which is injected into the urethra with a urethral syringe. I can see no especial advantage to this method.

Braun recommends doing perineal section for prostatectomy and for external urethrotomies under local anesthesia, but most men in this country prefer ether or spinal anesthesia for such work.

Novocain is an excellent anesthetic for doing suprapubic cystotomies, especially in old people, to whom you prefer not to give ether. The method is very simple. With a ten c.c. syringe the skin, subcutaneous tissues, muscle and prevesical space are infiltrated with a 1% or 2% solution of novocain and suprarenin. After waiting the usual length of time for the anesthetic to take effect, an incision is made down to the bladder wall. It is well then to inject a little 2% novocain into the bladder wall itself. The bladder can then be opened and drained without pain, provided you do not make traction on the bladder wall or press upon it. Traction and pressure on the bladder wall cause pain, even after the use of novocaine.

The anesthetic of choice for prostatectomy, either suprapubic or perineal, especially in feeble old men is spinal. The solution of choice is tropococaine.

Spinal anesthesia when properly given should produce satisfactory anesthesia for from three quarters of an hour to an hour and a half. In using spinal anesthesia for patients that are put into the lithotomy position care must be taken not to put them up into position for fifteen or twenty minutes, on account of the danger of producing too high an anesthesia.

The advantages of spinal anesthesia in these cases are many. First and foremost stand the lack of shock due to nerve blocking and the lack of ill effects on the kidneys.

The genito-urinary surgeon more than any other surgeon has to deal constantly with kidneys that are below par. An old man with long standing prostatic obstruction and constantly over-distended bladder has kidneys which have been weakened and their excreting powers lessened by the back pressure. The surgeon has to conserve the ability which such kidneys have left and must seek to improve it as soon as possible.

Ether does irritate the kidneys and spinal anesthesia does not. That in itself is reason enough for its use. In many of these cases it is of the utmost advantage to push water into them at the earliest possible moment to the limit in order to stimulate the kidneys to secrete properly. After ether it frequently happens that there is nausea and vomiting for several hours and fluid has to be introduced under the pectoral muscles or else let the patient go for several hours without enough fluid, thereby inviting the kidneys to shut down and produce uremia. Using spinal anesthesia, water can be started at once, even during the operation. There is no doubt that many poor risks are now saved by using spinal anesthesia who would have been lost by the use of ether.

The disadvantages of spinal anesthesia are its toxic elements and the fact that it is sometimes difficult to use in neurotic highstrung people. The toxic dangers have been pretty well eliminated by the perfection of the drug used. High strung patients are often helped by injections of morphine given some time before the operation.

I have not undertaken to describe the method of giving spinal anesthesia, as it should be done by a specialist and is not a part of the surgeon's work.

There are many more genito-urinary operations that can be done under local anesthesia, in fact most all such operations can, although in kidney work it is not very satisfactory except where it is necessary only to open a perinephric abscess or something of that sort in a patient who is too sick for ether.

In this paper I have attempted to show especially what can be done with local anesthesia in a genito-urinary out-patient clinic.

Medical Progress.

REPORT OF PROGRESS IN MENTAL DISEASES.

(Concluded from page 226.)

Part II.

By Henry R. Stedman, M.D., Brookline, Mass.

NERVOUS AND MENTAL DISTURBANCES FOLLOWING CASTRATION IN WOMEN.

From an analysis of 112 cases Gordon[11] concludes that (1) Removal of the reproductive organs in women causes disturbances in the domain of the nervous system. These disturbances are of a purely functional nature. (2) The disturbances are somatic and psychic. (3) The psychic manifestations, while individually they belong to any of the varieties of psychoneuroses, nevertheless in their ensemble do not constitute any of the well-established classical forms of psychasthenia. (4) True insanities are not observed. (5) The generally observed symptoms are: restlessness with a tendency to move from place to place; difficulty of self-control; dissatisfaction with all and everything; difficulty of finding contentment in one's own efforts; want of interest in all absorbing subjects and objects; indifference, indolence and pessimism. Sometimes there are outbreaks of anger with a tendency to attack. Among other symptoms may be mentioned: insomnia, gastro-intestinal disturbances of a functional nature, headache, vague pains or paresthesias, also occasionally glycosuria; tendency to obesity is also observed in some patients. (6) While the psychic manifestations are sometimes of a very disturbing nature, nevertheless they do not present the characteristics of genuine psychoses For example, indifference and want of interest in surroundings lack the depth of those of melancholia or of dementia. Restlessness, which is so frequently observed here, lacks the characteristic features of exaltation in the motor sphere observed in cases of mania. As mentioned above, while individual symptoms of his cases resembled those of psychoses, the entire picture of each lacked the depth and definiteness of any of the forms of insanity. Some of his patients had to be removed from their surroundings and isolated, not because they were insane in the proper sense of the term, but because of inconveniences caused by them to others. Besides, the subsequent histories of the last category of patients as well as of any other patient of his entire series proved at no time the existence or eventual development of true psychoses. On the other hand, it is striking that the morbid phenomena persist with remarkable obstinacy; at times they become more accentuated, at others some improvement is noticeable, but then it is only temporary. Some of his patients have been under observation during a period of ten years and the condition still persists unaltered. (7) Individuals who presented various manifestations of psychoneuroses before they fell into the hands of surgeons, had their psychic phenomena decidedly aggravated after the uteri and ovaries or only the ovaries were removed. (8) As in the removed organs healthy portions of tissue were invariably found, it is to be supposed that the removal of the latter is in some relation to the morbid phenomena observed after the operations. (9) The logical conclusion seems to be that one must be very cautious in advising operative procedures on the generative organs and the tendency should be to preserve as much as possible of any amount of normal tissue found in the uterus or ovaries. (10) No operation should be advised on healthy organs if a woman complains of vague disturbances.

NERVOUS AND MENTAL AFFECTIONS IN THE FIELD.

Weygant[12] says that, contrary to the practice under other conditions, the aim should be to hurry the patient away at once, stupefy him with a narcotic if necessary, and also use force if unavoidable; even a strait-jacket may be needed.

The main thing is to get him out of the battlefield environment at the earliest possible moment, and the less he remembers of the journey the better. There is no special war psychosis, but war is very liable to fan into flame a latent predisposition to epilepsy, hysteria, slight imbecility and manic-depressive or catatonic attacks, or a syphilitic brain or spinal cord trouble. Prompt removal of those affected is important not only for their own welfare but even more on the account of the effect on other soldiers. A kind of "mass psychosis" is liable to develop in a time of panic, such as occurred at Kirkilisse and Lule Burgas in recent years. He cites figures showing that psychoses developed in 0.54 per thousand of the German troops during the Franco-Prussian war; in 2.7 per thousand of the United States troops in the Cuban war, in 2.6 per thousand in the British during the Boer war; and in 2 per thousand in the Russian troops during the war with Japan, while the records show only 0.33 per thousand among the Bulgarian troops and also in the Servian troops, and 0.097 per thousand among the Grecian troops. He ascribes the difference between the Russian and the Balkan figures to the liquor-drinking among the Russians. He does not offer any explanation, however, for the large numbers among the German expedition corps in Southwest Africa, 4.95 per thousand; including cases of epilepsy and hysteria, 8.28 per thousand of the troops were thus affected.

MENTAL DISORDERS AND PERNICIOUS ANEMIA.

Barrett[13] has studied clinically the mental disorders of 11 cases of pernicious anemia, and in 9 of these a histologic study of the brain was made. The symptomatology of these cases showed considerable variety. Two were cases of epilepsy, 2 were not to be differentiated from dementia precox, 1 was a questionable manic-depressive psychosis, and 6 presented a characteristic picture of an asthenic state in which there developed a mental disorder of a paranoid type. It is to these paranoid conditions that this study is particularly devoted.

Brief accounts of 6 cases are given by Barrett. The first 2 of these showed a slight tendency toward delusional elaboration. In the remaining 4 the paranoid features were well developed. The cases, as a whole, have in common an irritability, and a suspiciousness which forms the ground on which develop the delusions of persecution. The content of the delusions is usually influenced by the somatic-neurologic symptoms and the situation in which the patient is placed as a result of these disturbances. In some instances there were auditory hallucinations to which the patient reacted with strong affect. In several cases there was confabulation, which suggested that seen in the Korsakow's syndrome. Comprehension and orientation were usually clear, except for rare episodes, in which they were slightly disturbed. In two instances the mood was slightly expansive. In a number of instances the course showed remission in the intensity of the physical conditions. Underlying the development of the mental condition in all but one of these cases was a hereditary predisposition. In several instances there was a number of occurrences of mental abnormalities or insanity among the ancestors. In all cases of pernicious anemia with mental disorders studied, hereditary factors were found in the greater number.

The histologic changes in cord and brain as a whole are not of a specific type, but rather those which occur in conditions of chronic intoxication and resemble those found in chronic alcoholism, namely, the occurrence of increased lipoid products in cells, glia overgrowth, vessel changes, miliary hemorrhages and intramedullary fibre degeneration. The similarity to a toxic type is further shown in the axonal type of reaction which was found in two instances, a change which has often been noticed in the Korsakow's symptom-complex and various forms of toxic neuritic disorders. As in toxic processes, the vessels are severely affected.

Clinically, Barrett points out there are features in these paranoid cases which resemble closely those seen in chronic and subacute toxic conditions, especially the chronic alcoholic delusional states. These are the occurrence of the suspiciousness and irritability, the development of the delusions of persecution, the auditory hallucinations and occasional memory impairment and confabulation.

INSOMNIA AND SUICIDE.

Under this title Pronger[14] discusses the influence that slight refractive errors have in causing many of the functional nerve troubles, so prevalent in these days. Among these, insomnia has naturally had a prominent place. Slight errors of refraction, although not causing any visual defect, are of great importance in that they give rise to sundry neuroses. Especially, says Pronger, should these slight degrees never be ignored in any case of insomnia, because some error is nearly always present in those cases not associated with organic disease, such as tumor, kidney troubles, and the like, or with persistent pain from any cause. Insomnia is not usually the only symptom, but is generally associated with attacks of great depression, and often with giddiness or headaches. A few illustrations are given by Pronger of what can be done for the relief of insomnia, and also of some of the difficulties that have to be surmounted, particularly the skepticism of the patient as to the possibility of glasses being of use for such a purpose, especially if the sight is good or an oculist has already been seen.

THYROID EXTRACT IN CERTAIN MENTAL DISORDERS.

For many years Goodall[15] has employed thyroid extract in cases of stupor and stupor with melancholia, or of confusional insanity—cases which have certain features in common with myxedematous cases, but until the last two years the failures were more numerous than the successes. He attributes many of those failures to the circumstance that he gave insufficient doses of thyroid. His recent experience entirely justifies those who have insisted on large doses if any benefit is to follow. Thyroid is not only beneficial in acute stupor, or acute dementia, and "confusional" states, but also at a later stage of these conditions and of cases of recent melancholia, when the patient has improved to a certain point and there remained. In these cases administration of thyroid has appeared to complete the process of recovery.

Eleven such patients were treated by this method. They were kept in bed during the whole course of treatment, usually in the open air, on liberal diet, and the temperature, pulse, and respiration were taken throughout twice daily. All had been mentally ill for months before the thyroid treatment was started. The amount of thyroid given varied from 25 to 50 grains a day for five to eight weeks. The pulse-rate was affected in the direction of increase very consistently, whereas the temperature and respiration were affected but slightly, or not at all. Gain of weight during the treatment occurred in two of eleven cases; one showed no change; in all the others a loss was noted, but after cessation of treatment weight was rapidly regained, and in eight instances there was ultimately a gain on the original weight. The results were highly satisfactory, since no less than six patients of eleven became well; and all the others except one, showed a definite improvement, and this one had been deranged for no less than three years when treatment was employed.

In eleven out of twelve cases of epileptic insanity treated with thyroid the number of fits was reduced. The patients were not on any other drug, but were kept in bed on ordinary diet, with in some cases, extras, such as milk and egg. A reduction of weight occurred in all except one. The observation as to the pulse, respiration, and temperature made in connection with the first series of cases apply also to this series. On the basis of these results Goodall kept certain of these patients on 5 grains of thyroid daily for a prolonged period; the patients were up as usual and on their usual diet. A substantial reduction in the number of fits occurred in many of these case, amounting in some to from 52% to 65%, as a result of a small daily dose of thyroid. No ill-effects were observed.

Lemel[16] is quite encouraged with the results of thyroid treatment in the twelve cases in which he has given it a thorough trial. These patients were all between 17 and 24. The improvement persisted for five years in one case, and then there was a return of the former condition. In the other cases the improvement has persisted to date, but the interval since has been shorter. In one case the interval is still too brief for estimation of the outcome.

HYOSCINE IN MENTAL DISORDERS.

Daniel[17] summarizes the important points regarding the use of scopolamine hydrobromide as follows: (1) The continued administration of scopolamine hydrobromide may give rise to characteristic symptoms of chronic poisoning. (2) Weak-minded epileptics appear to have a marked idiosyncrasy for the drug. (3) Careful watch should be kept on all patients taking hyoscine regularly, and undoubtedly the best test for any ill effects is the weighing machine. (4) For acute excitement there is no drug so reliable as hyoscine when given hypodermically, but the doses must not be repeated indefinitely. (5) Lastly, there is no doubt that life may be endangered by hyoscinism.

THE WET PACK IN THE TREATMENT OF INSOMNIA AND MENTAL DISORDERS.

Raynor[18] regards the following classes of cases as the most favorable for its therapeutic employment in asylums: (1) In acute delirious mania, of sthenic type, with continued insomnia. It constantly succeeds in producing sleep when narcotics have failed utterly; also, in mania of sthenic and active type. (2) In insomnia accompanying mental disorder, with associated toxic conditions, whether of melancholic or of maniacal type. Climacteric and gouty conditions, alcoholic and drug habit cases are specially benefited. He shows that its first effect is the production of a cold state, with shivering and a falling temperature. This is followed quickly by the stage of reaction, in which the temperature rises and there is profuse sweating due to dilatation of the cutaneous vessels, with subsequent sleep. There is probably considerable elimination of toxins in the sweat. He lays stres on the point that as soon as the temperature reaches the normal the coverings should be diminished, as it is not desirable that pyrexia should be produced, and he adds other practical points to be observed. This mode of treatment, which is certainly of great service in the treatment of some forms of mental disorder, of insomnia, and of many bodily disorders which are found in the insane as well as in the sane, he regards as especially advantageous for institutions for the insane. He adds that the vanished employment of wet packing in asylums [in England] is almost certainly due to its being classed as a form of restraint. The regulation of 1872 enforcing the record of wet packing was certainly not intended to produce this result, but only to check its abuse as a method of veiled mechanical restraint. The lunacy commission, he remarks, has been always most punctilious in avoiding any interference with legitimate therapeutical methods, yet the use of the dry and wet pack is still considered as a method of restraint in their revised regulations of 1913. These regulations demand still further consideration and it may be hoped that, whilst preventing the abuse of wet packing, they may be so framed as to encourage its employment as one of the most important and valuable means of treatment of the insane.

REFERENCES.

[11] Journal A. M. A., Oct. 17, 1914.
[12] Medizinische Klinik, Sept. 27, 1914.
[13] Am. Journal of Insanity, Vol. lxix, No. 5.
[14] Lancet, London, December 12, Vol. ii, No. 4768.
[15] Lancet, London, December 5, Vol. ii, No. 4762.
[16] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam., No. 4.
[17] Journal Ment. Sci., Oct., 1914.
[18] Journal Ment. Sci., Oct., 1914.

◆

Book Reviews.

Case Histories in Obstetrics. Groups of Cases Illustrating the Fundamental Problems Which Arise in Obstetrics. By ROBERT L. DENORMANDIE, A.B., M.D.; Assistant in Obstetrics, Harvard Medical School; Physician to Out-Patients, Boston Lying-in Hospital; Assistant in Gynecology, Boston Dispensary.

This, on the whole, very excellent volume is a good example of both the advantages and the disadvantages of the case history system of constructing a text-book or book of reference. The cases are given in great detail, and their detailed recital covers not merely the feature in the case which it is especially intended to illustrate, but the case as a whole in all its features. Each case thus assumes a strong verisimilitude to actual experience and carries many lessons beside that which is its especial function in the book. To one who knows the persistence with which incidental lessons often linger in the memory, this is a very valuable characteristic. The book reflects throughout the author's wide experience in direct personal contact with students. The simple lucid style and the wealth of practical detail should make it of great value, not only to the advanced student or inexperienced practitioner, but to all the many physicians who have been obliged to pick up their practical obstetrics after receiving nothing but the routine school training. Such men are usually for many years in a position to profit highly by such practical hints as those with which this book abounds. It is well arranged, the table of contents is excellent, the summaries of each subject are clear and practical, and though the index does not appear very full it should be easy of use as a work of reference when its possessor desires to look up a single subject, but considered as a work of reference it has the defects of its qualities. The method adopted necessarily makes the discussion of each subject discursive and complicated with irrelevant matter. With sufficient time to read and absorb the subject under review, as given in the cases and summary, the inexperienced practitioner will probably get a better knowledge of the points involved than from the briefer descriptions given in the routine text-books, but he will not get it so quickly nor can he expect to find all he wants at any one spot. The book as a whole furnishes an interesting and surprisingly practical picture of how a careful and thoroughly modern obstetrician conducts his work in all or most of its phases.

Local and Regional Anesthesia. With Chapters on Spinal, Epidural, Paravertebral, and Parasacral Analgesia, and on Other Applications of Local and Regional Anesthesia to the Surgery of the Eye, Ear, Nose and Throat, and to Dental Practice. By CARROLL W. ALLEN, M.D., Instructor in Clinical Surgery at the Tulane University of Louisiana, New Orleans; Lecturer and Instructor in Genito-Urinary and Rectal Diseases at the New Orleans Polyclinic; Visiting Surgeon to the Charity Hospital. With an Introduction by RUDOLPH MATAS, M.D., Professor of General and Clinical Surgery at the Tulane University of Louisiana, New Orleans, etc. Illustrated. Philadelphia and London: W. B. Saunders Company. 1914.

This is a well-printed book of 600 pages covering every portion of the field of local anesthesia. Under this head, as is apparent from the title, Dr. Allen includes chapters on spinal and sacral anesthesia.

This is the book of an enthusiast, who has made much practical use of the methods he describes, and has covered the literature upon the subject in a most extraordinary manner. It is unfortunate indeed that this extensive bibliography is eliminated from the book, even for the excellent reason of avoiding undue bulk. The author has been successively a student, assistant and associate of that brilliant, untiring and original surgeon, Matas, of New Orleans, who nearly two decades ago planned and actually began a book on this subject. It will be somewhat of a surprise to a good many young surgeons to discover that Matas was one of the greatest and earliest investigators of local anesthesia in this country. His name has usually been associated with entirely different branches of surgery. His introduction is interesting and contains a brief summary of the various and unusual procedures which he carried out in those early years. Dr. Allen most enthusiastically credits his teacher with not a few of the great advances made in the early days of local anesthesia.

The Myth of the Birth of the Hero. By DR. OTTO RANK. Authorized translation by DR. T. ROBBINS, AND DR. SMITH ELY JELLIFFE. Nervous and Mental Disease Monographs, No. 18. New York: Nervous and Mental Disease Publishing Company. 1914.

This latest addition to the excellent series of monographs on nervous and mental diseases is a translation of a monograph by one of the followers of Freud, applying his view of the domination of the sexual instinct in infantile psychology, to the development of the myths of various nations. Though unconvincing because of the typical Freudian overuse of symbolism to force everything in the myths into a preconceived idea of the rôle of certain elements in psychological factors, the book is interesting, and the translation reads smoothly.

Psychopathology of Everyday Life. By PROF. SIGMUND FREUD, LL.D. Authorized translation by A. A. Brill. New York: The MacMillan Company. 1914.

The psychologic theories of Freud are extremely interesting to physicians who have to deal with the neuroses, mental diseases, or psychology, though many able men are unable to accept parts of his theories, notably the concept of a psychologic censor, and the all-controlling influence of the sexual instinct in psychology to the exclusion of other instincts, and psychologic states. The extension of these theories to the psychology of everyday life is still more questionable than their application to neurotic symptoms and mental states, but is praiseworthy as showing a widening field of inquiry in physicians who are concerned in the study of the neuroses. In spite of these reservations which the reviewer feels he must make for the guidance of his readers, this book throws much light upon many of the phenomena of everyday mental actions of the normal, as well as of the pathologic mind, and shows exceedingly well how the mental processes of pathologic mental states follow the lines of normal psychologic processes. The translation seems well done, and for the most part reads smoothly.

The Unconscious. The Fundamentals of Human Personality, Normal and Abnormal. By MORTON PRINCE, M.D., LL.D. Professor (emeritus) of Diseases of the Nervous System, Tufts College Medical School; Consulting Physician to the Boston City Hospital. New York: The MacMillan Company. 1914.

Dr. Prince has long been known for his numerous and careful studies of abnormal psychology, and this book consists mostly of selected lectures from courses on that subject delivered at the Tufts College Medical School and at the University of California in 1910, though these have had incorporated in them a large amount of new material, and the subject has been treated more in detail than was practical before students. The book is clearly written, and anyone, even without any special knowledge of psychology or abnormal psychology, should have no difficulty in following the writer in the development of his ideas.

The first lectures take up the theory of memory, and certain of the phenomena connected with it, with illustrations drawn from both the normal and the abnormal. A lecture on neurograms then pleads for a physical basis in the brain as a foundation for memory. The various phenomena of the unconscious and of subconsciousness are then very clearly set forth. The remaining lectures develop the writer's views of the relation of unconscious ideas to the emotions, instincts, sentiments and conflicts, and the origin through these of the abnormal psychologic phenomena which we classify as the various forms of functional nervous disease.

Whether one is ready to accept in full the conclusions of the author as to the origin of these abnormal psychologic states will depend largely upon the reader's knowledge of these states, and of psychologic phenomena, influenced no doubt by the theories held; but no student of these important and exceedingly complicated phenomena can fail to profit from the reading of this book, and rise from it with a clearer idea of the problems to be solved in this field. Those who are not special students of this subject also cannot fail to gain something from its perusal and to be more able to estimate at their true value the articles so often published in popular magazines on certain aspects of these phenomena.

It may not be amiss to call attention to a couple of misprints, the first in the second footnote on page 426, where Dr. Cannon's article should have been credited to the *American Journal of the Medical Sciences,* and another in the last line of the text on page 443, where "cardiac and respiratory disease" should evidently read "distress."

The Clinics of John B. Murphy, M.D. At Mercy Hospital, Chicago. December, 1914. Published bi-monthly. Philadelphia and London: W. B. Saunders Company.

This number contains, besides an index to Volume III, a description of a series of interesting surgical cases; a paper by Dr. C. L. Mix on Hodgkin's Disease; Fracture-Dislocation of the Spine at the Level of the Twelfth Dorsal Vertebra; Appendicitis; Cholecystitis; Sarcoma of Tibia; Arthroplasty for Bony Ankylosis of the Wrists; Tuberculous Epididymitis; Perforating Duodenal Ulcer; Retroperitoneal Sarcoma. This December number does not seem quite up to the previous general average.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, FEBRUARY 18, 1915.

Editors.
Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D. } *For the Massachusetts Medical Society.*
Frederick T. Lord, M.D. }

Committee of Consulting Editors.
Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.
Edward C. Streeter, M.D., Boston, *Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE BLOOD-PRESSURE DURING PREGNANCY.

In the *Journal of the American Medical Association* for January 30 is published the notable contribution to this subject presented by Dr. Franklin S. Newell at the fifth annual meeting of the American Association for the Study and Prevention of Infant Mortality held here in November, which is based on observations on 450 cases from the records of the committee in charge of the pregnancy work carried on by the Women's Municipal League of Boston. He concludes, very properly, that the significance of the rise in blood-pressure noted in a considerable number of women during gestation can be ascertained only by a frequent study of the blood-pressure in a large number of cases, and, in order that definite knowledge on this whole subject may be attained, it is certainly highly desirable that such studies on a large scale should be made. In this series of cases 421 of the 450 patients showed a blood-pressure which at no time was either below 90 or above 130; in other words, these 421 patients showed what can be properly classed as absolutely normal pressure. Of the 421, 78 at some time during the pregnancy showed a pressure slightly below the normal, ranging somewhere about 90 and 100. In none of these patients, however, was the low blood-pressure persistent, it being observed only on one or two examinations, and in no instance did any uncomfortable symptoms afterward develop in labor which were referable to the low pressure; indicating, therefore, that a temporary low blood-pressure is of no significance during pregnancy. If the pressure remains persistently under 100 it is regarded as fair to assume that the patient's general condition is below par, and steps should be taken to improve it. If the pressure is over 130 the patient should be kept under close observation, even in the absence of other symptoms, and a rising pressure should always receive the most careful attention, as possibly being the initial symptom of an impending toxemia. In the 450 cases the examination of the urine showed albumin persistently or temporarily present in fifty patients. Of these, eleven showed also a blood-pressure of over 130, and every case of toxemia in the series, with the exception of one in which post-partum eclampsia developed in spite of a normal pressure, every case of toxemia occurred among these patients.

Among the conclusions of Newell are the following: In certain cases a rise in blood-pressure was followed by the appearance of albumin in the urine, a combination which has been shown to be a definite indication of the development of toxemia. In only one instance, however, did convulsions occur, the other cases yielding to treatment. Thirty-nine cases showed traces of albumin in the urine, but no change in the blood-pressure. As the urine was not obtained by catheter, the source of the albumin is unknown, but in the majority of the cases it was probably due to contamination of the urine by leucorrheal discharge. To judge from these cases, the presence of a slight amount of albumin, if not accompanied by a rise in blood-pressure, is negligible. All the eleven cases, however, which showed albuminuria with a high blood-pressure were presumably more or less toxemic. Five patients showed a pressure of 140, or over, throughout the period during which they were under observation, but only one of these developed albuminuria at any time during the pregnancy; which would tend to prove that persistent high blood-pressure, in the absence of other signs, is not necessarily a dangerous symptom. Still, it should always arouse suspicion and call for increased watchfulness, whereas, as was shown in other cases in the series, a rise in blood-pressure from a low point is not infrequently followed by the appearance of albumin and the development of symptoms of toxemia, and is more significant than a high pressure throughout. A pressure of 150 has been commonly regarded as the danger line, but a persistent rise of the pressure from a low point, even though it may never reach this arbitrary danger point, calls for most careful attention.

Of great interest in connection with this report is the experience of Dr. D. J. Evans of Montreal, as recorded in a paper on "High Blood-Pressure in the Toxemias of Pregnancy," read before the American Therapeutic Society at its annual meeting in 1912. Evans's material consisted of thirty-eight cases of actual toxemia in which pregnancy was complicated with eclampsia, albuminuria and vomiting of a toxic type, and in twelve of the series the condition was so severe as to call for the induction of premature labor. In eight cases eclamptic convulsions occurred, and among these the highest blood-pressure was 200 and the lowest 140. In most of the cases the pressure was from 170 to 190 immediately before the convulsions. One of the patients had three convulsions, though her blood-pressure did not rise above 150 except at the actual time of a convulsion. Of two patients whose pressure was 200, one had five convulsions, and the other eighteen. There were four cases of severe vomiting; two early in the pregnancy and two near term. In the latter the blood-pressure was 140 in one, and 125 in the other, and in both instances labor was natural. Of the former, one patient, whose blood-pressure was never above 125, recovered from her vomiting and went to term; while in the other case abortion occurred at the sixteenth week and the patient died ten days later. This case was of special interest, as the patient's blood-pressure, usually about 100, never rose above 110; yet she developed retinal hemorrhage, in addition to other signs of grave toxemia. Of the remaining 26 cases, all had albuminuria with toxic symptoms of more or less marked severity. Seven had a blood-pressure of 160, or over; two of them as high as 180. In twelve the pressure was 140, or under, the lowest record being 120.

As a result of his experience Evans reaches the conclusion that the blood-pressure record is of little value as indicating the degree of toxemia present in cases of severe vomiting, and that further observation would demonstrate that in this class of cases the pressure falls below normal. He has been surprised at the comparatively low reading found in many instances where the symptoms indicated the existence of a very considerable degree of toxemia. In three of his series the induction of labor was imperative although the blood-pressure was 150, or under, while in four cases with a pressure exceeding 150 the toxic symptoms were so slight that the patients were permitted to go to term; when their labors were entirely normal. He is inclined to consider the danger limit as 160, and advises that in cases where, in spite of treatment, the toxic symptoms do not yield and the blood-pressure is maintained at or above this figure, pregnancy should be interrupted. In cases of pregnancy with high blood-pressure without toxic symptoms, a number of which he has met with, he believes there is little occasion for anxiety; but in all cases with renal or hepatic insufficiency the blood-pressure should be carefully watched. A rising pressure, associated with other toxic symptoms, in these cases is indicative of danger. As was suggested in the beginning, there is unquestionably need of further and more extended observation and study regarding the significance of the various phases of the blood-pressure in pregnancy. Thus, in the two series of cases cited, the blood-pressure referred to is presumably the diastolic pressure, and no mention is made of the systolic pressure, which in other conditions has of late assumed a position of very considerable importance.

◆

EUGENIC LEGISLATION.

In spite of all the optimism of the eugenists it is obvious that, much as it might be desired on scientific grounds, the methods of the stock-farm are inapplicable to human beings. And besides, the study of heredity has convinced almost beyond a doubt that disease tendencies, particularly defects, are transmitted from and by ancestor to progeny; and that it is of far more importance to prevent transmission by this method than to attempt to build up synthetically from "perfect" individuals finer and more ideal products.

The existence of veritable colonies of defectives in many States has persuaded quite a number of the legislative bodies to enact statutes permitting the sterilization under certain conditions and safeguards of the mentally and morally defective populations of public institutions, in the hope that in this way will propagation by these "species" be anticipated, and their line become extinct. The legality of this procedure has, naturally, been attacked—in the defective that it is an interference with the absolute right of person, and in the criminal that it is "cruel and inhuman punishment," and against the constitutional restriction in the eighth amendment. The legal phases of this question are many, and are open, and must be finally decided before this practice can have universal application.

It is not merely jurists or laymen who are opposed to sterilization. Many very prominent scientists have expressed opposition to this practice on the ground that it is unscientific. On the Mendelian elaboration an individual himself defective, when born from the union of a defective and a normal, may yet produce normal offspring, because the dominant determiners in him alone are active, while the recessive or defective ones are dormant or inactive. This is illustrated in hemophilia, where the recessive characteristic causative of the bleeding diathesis is rendered active only when transmitted through a female to her male offspring; and where the bleeder leaves no potent female this constitution is forever inactive, and is finally wiped out because of inactivity. To sterilize the bleeder would be to destroy normal males, as well as the offending females. Reversely, one of two normal mates may have within himself an ancestral recessive defect, dormant in him for the time, but which the union under certain conditions renders active in an offspring. This may give explanation to the presence of a defective in a normal or even otherwise highly developed family.

The opponents of sterilization contend that until something more definite is learned of the method of hereditary transmission, sterilization as a public welfare procedure is not justified. Sterilization can logically only, if at all, be carried out with the distinct mental reservation that there is to be a sacrificing of the lives-to-be of normals in this endeavor to anticipate the inception of defective lives-to-be. And the question naturally arises: do these future normal lives-to-be have present value enough for so radical a remedy?

A form of eugenics, negative also, to be sure, that is intended to affect the public in general, is that purposed through legislation requiring all who contemplate marriage to submit certificates of good health as conditions precedent to the issuance of marriage license. The determination and the responsibility for this momentous and often difficult question is thrown entirely on the shoulders of the physician, whether in his private or whether in his public capacity. In effect it is calling upon him to pass on the most organic question in society. His certificates of health will be policies of insurance of immensely greater significance than money risk insurance certificates. They will insure not only against the existence of present patent or present but latent diseases or defects in the contracting parties, but also against subsequent ones arising thereafter, because it will be difficult to determine a causation prior or subsequent to marriage. And yet in so far as venereal diseases are concerned—against which the largest element of this propaganda is aimed—this determination is comparatively simple, only in the very rare instances when the applicants would present themselves for examination during the acute or subacute stages. But how many latent gonorrheas escape detection even after the most painstaking examination and even in individuals who will not marry unless declared free from disease? Even recently active syphilis can be made to escape detection by the Wassermann reaction after a period of anti-syphilitic treatment, beside many instances in which the reaction is negative in clinically positive cases not under treatment. Incipient cases of tuberculosis often defy detection, even with the most advanced diagnostic measures, only to bloom out shortly thereafter. Positive cases of insanity will escape the examiner if examined during a lucid interval, or in active cases where the delusions and the like manifestations ars studiouly concealed. In epilepsy a sufficiently positive diagnosis can never be made between attacks except where the physical and mental deterioration is marked from very profound or very frequent attacks.

Even on the most liberal and on the very broadest construction, how can such a restriction to marriage affect individuals who are themselves admittedly fit, but who present definite taints in their immediate or remote ancestors, and who are theoretically just as potent to transmit defect as if they themselves were affected? Legislation forbidding them marriage would fail utterly of enforcement because so extreme and because impracticable.

Before such legislation is unreservedly endorsed, physicians must consider that in every case where disease or defect would manifest themselves after marriage, either in the contracting parties or in their offspring, the examining physician would be held under the gravest suspicion—and the integrity and competence of the whole profession might fall into disrepute.

HOSPITAL QUIET ZONES.

At the instance of the Women's Municipal League of Boston an ordinance for the establishment of quiet zones in the vicinity of hospitals was recently drawn up by the Boston Street Commissioners and submitted for approval to the Mayor. The text of the proposed ordinance was as follows:—

"Section 1. The Commissioner of Public Works is hereby authorized and required to conspicuously place and maintain at corners of intersecting streets, avenues, and places on which may be located a hospital or other institution for the care of the sick, a sign or signs displaying the words, 'Hospital Street;—Unnecessary Noises Prohibited.'

"Sect. 2. On any street designated as a 'hospital street,' on which such a warning sign as described in the preceding section has been erected, or within one hundred yards of any hospital or other institution for the care of the sick, no person shall make unnecessary or unseemly noises, including the crying out of his wares by a vender or peddler; loud or boisterous speech or conversation by individuals or groups of individuals; the sounding or playing of musical instruments and the sounding of an automobile whistle or horn, other than a reed horn; and no driver of a horse-drawn vehicle shall drive his horse or horses at a speed faster than a walk.

"Sect. 3. Any person guilty of violating the provisions of this ordinance shall be fined not more than $20 for each offence.

"Sect. 4. This ordinance shall take effect sixty days after its passage."

At a hearing recently held before the commissioners in behalf of this ordinance many causes of disturbance to the sick in hospitals were enumerated by hospital administrators and other officers. The report of the commissioners to the Mayor regarding the ordinance comments as follows on these complaints and on possible methods of obviating them:—

"The noise of heavy teams rattling through hospital streets is the only one of these things complained of that the board could control. It could do this by making a rule that such teams should be kept out of hospital streets. To this, however, objection was made by team owners and shippers, and not without cause. To give this relief to some hospitals, teaming would have to be diverted from main thoroughfares, and this the transportation interests protest against. The board is of the opinion that so little relief can be given by diverting traffic, it is not worth while to attempt anything in this direction.

"Next to the noise made by heavy teams, that made by the excessive use of the automobile horn or whistle is the worst and the most complained of. It is difficult to say whether it is the statute that is at fault or whether it is the fault of the drivers of motor vehicles, who may be careless as to the use of the horn or indifferent to their surroundings. The automobile statute, it is true, requires operators of motor vehicles to sound a warning at intersections of streets, and they may be punished for not doing so. The same statute, however, undertakes to prohibit the excessive use of the warning signal. There have been many prosecutions for failure to sound the signal, while prosecutions for too much sounding of signals have been rare.

"It would seem that the requirements of the statute would be met if the operator confined his efforts in signalling while near a hospital to the reed horn, which is not so objectionable as some of the other horns in use. To meet this complaint the board has incorporated in the proposed ordinance a provision that only the reed horn shall be used by automobile operators in the vicinity of hospitals.

"In addition to the adoption of some such ordinance as the one proposed, great relief would be given to hospitals if the surrounding streets were paved with some noiseless material. Your Honor has already suggested that this be done. The board heartily concurs with you in this suggestion. With such pavement, and with the requirement that drivers of horse-drawn vehicles shall not drive their horses at a speed faster than a walk in front of hospitals, the sick in these institutions will get as much relief from disturbances in the highways as it is possible to give them.

"It is an unfortunate circumstance that so many of the largest hospitals are located in the busiest of the city's thoroughfares. The board believes, as do most of the good people who give so much of their time and effort to the relief of the sick, in public and private hospitals, that the mere placing of signs calling attention to the fact that the street is a 'hospital street' will have powerful influence in reducing the noises complained of."

In view of this report and the representations of many persons interested in the passage of this project, it appears that although the original scheme for the establishment of quiet zones about hospitals must be considerably modified, some definite relief from present conditions may be hoped and expected from the provisions of the proposed bill.

THE LOCAL PUBLIC HEALTH OF SUMMER RESORTS.

In another column of this issue of the Journal we republish the report of a committee on village improvement appointed to deal with the conditions of local public health at a well known New England summer resort. This report illustrates admirably how this community met its responsibilities, so far as health is concerned.

The first outstanding feature of the report is the notable prevalence of typhoid fever, not only at York but at other similar resorts. The extent of this prevalence is not generally realized and it is desirable that recreation seekers should be intelligently instructed about so-called "vacation typhoid" or what used to be known as autumnal fever. This can be done only by freely publishing the truth concerning typhoid as of all other contagious diseases, a policy which, whenever pursued, has always been shown to be followed by good results.

The town of York is one of not a few summer resorts which has met its local problems of public health in a model manner; but there remain many others which could wisely and profitably take example by its lesson. The two essentials of the method by which this excellent result was accomplished were, first, the replacement of the old-fashioned, inadequate and clumsy board of health by a full time health officer; second, the voting of an adequate appropriation thoroughly to carry out the needed reform. Although in this instance the annual appropriation amounted to only $1.00 per capita, that sum, as a matter of fact, is proportionally greater than that which any other American city spends directly for public health. Similar methods and a proportionate appropriation in every American city and town might well be expected to accomplish equally creditable results. No community, whether that of a health resort or of an agricultural or industrial center, can longer afford to depend upon nature and luck for a clean bill of health, but must rely rather on the intelligence and efficiency of its local public health officers.

MEDICAL NOTES

Endowment Fund for Medical Research.—Report from Minneapolis on February 9, states that the Drs. Mayo of Rochester, Minn., have decided to establish a $1,000,000 foundation for medical research, to be placed under certain restrictions in the hands of a board of regents in the University of Minnesota. It is planned that the interest of this fund shall be used annually for research by graduate medical students of the University. At a meeting of the faculty of the University of Minnesota Medical School on February 8, this project was approved and has been referred to the advisory board.

United States Death Rate in 1913.—A report issued by the United States Census Bureau on February 8, shows that in 1913 the death rate of the United States was 14.1 per thousand of the estimated population in the registration area, as compared with 13.9 per thousand in 1912. The total number of deaths in the registration area, which contains about two-thirds of the national population was 890,948.

"Washington State showed the lowest rate, being 8.5 per 1000, while New Hampshire's was the highest with 17.1 per 1000. The rate in Massachusetts was 15. The lowest rate shown in 1913 by any of the fifty registration cities with populations of 100,000 or over in 1910, was that of Seattle, which was 8.4, while Memphis showed the highest with 20.8. Boston's rate was 16.4; Cambridge, 13.5; Fall River 17.2; Lowell, 15.9; Worcester, 15.8. The average age at death for both sexes, from all causes combined was 39.8; for males alone 39.2, for females, 40.6. Nearly 18 per cent. of all deaths were of infants under one year of age, and more than 25 per cent. were of children under five years.

"The death rate from tuberculosis declined from 149.5 per 100,000 population in 1912, to 147.6 in 1913. The rate from cancer rose from 63 per 100,000 in 1900 to 78.9 in 1913. The number of suicides was 9998, the rate being 15.8 per 100,000, compared with 16 in 1912."

Tuberculosis Among Workingmen.—A new campaign for closer co-operation with labor unions and other groups of workingmen is announced by The National Association for the Study and Prevention of Tuberculosis.

A committee has been appointed with Dr. Theodore B. Sachs, President of the Chicago Tuberculosis Institute, as chairman, to formulate plans for immediate and future action. Other members of the committee are: Dr. William Charles White, Medical Director of the Tuberculosis League of Pittsburgh, and Dr. David R. Lyman, Superintendent of the Gaylord Farm Sanatorium, Wallingford, Conn.

As the first step in the campaign, a special health bulletin has been prepared for the labor papers, and will be sent out monthly in coöperation with members of the International Labor Press Association. A second step in the plan is an investigation into the various special experiments of co-operation between workingmen and the anti-tuberculosis movement that have been carried on in this country. Such work as that of the tuberculosis relief associations in Hartford, New Haven, Meriden, and other Connecticut cities; the Trades Union Sections of the Buffalo and Newark Anti-Tuberculosis Associations; the work of the Factory Committee of the Chicago Tuberculosis Institute; the Tuberculosis Pavilion of the Albany Federation of Labor; the "Overlook Plan" of Massachusetts; and other similar efforts are being studied and reported upon. These reports will be made the basis for recommendations and further study in industrial communities throughout the country.

NEW YORK CITY'S DEATH RATE CONTINUES LOW.—The mortality noted during the past week was remarkable for the low rate recorded. There were 1,460 deaths reported as against 1,628 deaths during the corresponding week in 1914, a decrease in the absolute figures of 168 deaths, and if the increase in population be taken into consideration, a relative decrease of 236 deaths.

Every prominent cause of death showed a decreased mortality, especially measles, diphtheria and croup, scarlet fever, whooping cough, typhoid fever, diarrheal diseases under five years of age, organic heart diseases, acute diseases of the respiratory organs, influenza, tuberculosis of all organs, Bright's disease and nephritis, and violence.

The greatest decrease in mortality was shown in the number of deaths reported from organic heart diseases, the pneumonias, and the deaths from accident. At all age groups, with the exception of infants under one year of age, the mortality was lower than in the corresponding week of 1914.

The death rate for the first five weeks of this year was 14.08 per 1000 of the population as against a rate for the corresponding period of 14.75, a decrease of .67 of a point.

EUGENICS AND MARRIAGE IN WISCONSIN.—Report from Madison, Wisc., on February 6, states that during the year 1914, the first year of the operation of the new eugenics marriage law, only 13,300 marriages were recorded in that state as against 17,332 during 1913. If the quality of these marriages is demonstrated to have been improved, the eugenic law may be considered to have fulfilled its object.

CASE OF LEPROSY IN CHICAGO.—Report from Chicago states that a case of leprosy was discovered in that city on February 5 in the person of a recent Italian immigrant working as a night watchman. The patient has been deported.

EPIZOÖTIC OF FOOT AND MOUTH DISEASE.—On February 5 a dozen new cases of foot and mouth disease were discovered in the local stockyards at Cincinnati, Ohio, which were thereupon quarantined. These cattle had been shipped from Indianapolis. As a result of this discovery and of other recrudescence of infection in Chicago, Louisville, Buffalo, Pittsburgh and Jersey City, a new quarantine order was issued on February 6 by the department of agriculture modifying the quarantine regulations in these regions. On the same day the Bureau of Animal Industry announced that the total loss from the present epizoötic amounts to $3,399,110.

Twenty states and the District of Columbia have been more or less affected since last October. By January 31 the work of checking the disease was practically completed in all but seven states and further progress is continually being made. There have been slaughtered 46,268 cattle, 47,735 swine, 7,151 sheep and 22 goats.

The cost of the epizoötic in other states has been: Illinois, $1,338,854.18; Pennsylvania, $750,000; New York, $293,224; Rhode Island, $47,084.50; Connecticut, $35,787.10.

In Massachusetts the cost thus far has been $72,425, and an appropriation of $100,000 has been asked of the General Court to meet this and further liabilities. Statistics show that in Massachusetts the disease has appeared in 32 towns and 794 herds. The total appraisal of animals was $119,050 and of property destroyed $25,000, of both of which the State pays one-half and the federal government one-half. Several new cases of the disease were discovered on February 8 at Waltham, Mass., and on February 9 at Arlington, Mass. In both places quarantine has been reëstablished.

EUROPEAN WAR NOTES.—Report from Vienna on February 4 by way of Amsterdam and London states that small-pox is at present epidemic in the Austrian capital but the number of cases is not stated.

In an address before the Surgical Society of Paris on February 6, Dr. Truffier is reported to have said that of the 14,000 surgeons in the French Army, 6,500 are now at the front. Up to the close of December 93 surgeons had been killed, 260 wounded, 440 were missing and 155 had been mentioned in orders for gallantry on the field of battle.

The Constantinople Chapter of the American Red Cross, after a recent conference with Dr.

Suleman Nouman, inspector general of the Turkish Military Sanitary Service, has sent to the Ottoman war department a list of American Missionary Hospitals in Asia Minor, having a total of approximately 1000 available beds. It is intended that these hospitals shall be used in meeting war emergencies in caring for the wounded of all nations.

Of the 15 institutions listed, two are the French and British hospitals in Constantinople, now under the American Red Cross. On the others, 10 are hospitals connected with mission stations of the American Board while one conducted under an independent board of trustees is officered by men formerly connected with the American Board.

The Turkish Ministry of War has been asked to furnish certain supplies—drugs, absorbent cotton, oil, coal, etc.—for the British and French hospitals in Constantinople, but nothing is said about the furnishings for the hospitals in the interior.

Prior to the outbreak of the war the total number of physicians in Europe was approximately 200,000, of whom there were 48,000 in Great Britain, 32,000 in France, 26,000 in Germany, 24,000 in Italy, 20,000 in Russia, 13,000 in Austria, 12,000 in Belgium and 8,000 in Spain. The proportion of physicians to population is much greater in Great Britain than in any other country, but it is highest of all cities in Brussels, where there is one to every 400 inhabitants.

Three more American surgeons have recently left this country for field service in Europe. Dr. Earl B. Downer of Lansing, Mich., will go to the first American Red Cross hospital unit at Belgrade; Dr. James E. Stowers of Kansas City, and Dr. E. L. Gilchrist of Gainsville, Texas, to the American Red Cross hospital at Paignton, England.

Report from Vienna by way of Washington, D. C., on February 8 states that the Red Cross badge of honor of the second class has been conferred upon Drs. MacDonald, Jewett and Miller of the American Red Cross hospital at Budapest. Report from Vienna by way of London on February 9 states that Surgeon General Philip Peck, chief of the Austrian Army Medical Corps, has died of typhus fever contracted during an inspection trip to the camps of the Russian prisoners in Austria.

A recent correspondent of the *British Medical Journal* who has been in charge of an ambulance in France, has investigated some of the psychical consequences of experience on the battlefield and in the trenches. "Neurotic subjects, as one would expect," he says, "react in a most striking fashion to the shock of explosions in their immediate vicinity. Some develop a tendency to somnambulism and are met wandering about the premises with terror and anxiety depicted on their faces in anxious search of their regiments. Short of somnambulism the dread of losing contact with their fellows seems to be felt with extreme frequency, and horror of isolation constitutes the commonest nightmare of men in the first fighting line. They dream that they are wandering through endless trenches as complicated as an artificial maze, or are picking their way through lonesome forests whence all but they have fled. The slightest noise during sleep calls up visions of exploding shells or the tramp of armed men, throwing them into a frenzy of shouting terror, to the indignation of their resting fellows. Oddly enough, these men are as brave as the rest in face of real danger. Another common night terror is the dream of a sudden call to arms and the inability to find some indispensable article of attire or combat, a conception productive of intense mental agony. Live shells naturally occupy a large share of subconscious attention, and an exasperating nightmare is the discovery in one's bed of a shell ready and willing to burst, associated with the usual nightmare incapacity to execute the necessary movements to get rid of it. Several men have had dreams centering round the inability to withdraw the bayonet from the enemy's body when urgently required for self-defence. Numerous instances of "traumatic hysteria" are met with in which men suddenly roused from deep sleep by explosions, develop the characteristic paralyses and disturbances of sensation. In one case there was marked limitation of the field of vision and inability to connect letters into words; the man could read the letters, but could not pronounce the word when spelled nor write the word when pronounced. Insomnia and more or less troublesome restlessness are also common consequences of the strain on the nervous system of actual warfare."

On February 12 the total of the New York Belgian Relief Fund amounted to $918,016.98; the New York Red Cross Fund to $457,583.86; the American Jewish Relief Fund to $458,792.05; the American Ambulance Hospital Fund to $325,929.86; and the Committee of Mercy Fund to $117,904.42.

On February 13 the total of the New England Belgian Relief Fund amounted to $197,573.77; Massachusetts Red Cross Fund to $109,723.12; and the American Polish Relief Fund to $20,582.77.

BOSTON AND NEW ENGLAND.

Dedication of the Chapin Memorial Building.—On Thursday of last week, February 11, the new Frederick Wilcox Chapin Memorial Building of the Springfield (Mass.) Hospital was formally dedicated with appropriate exercises. A eulogy of Dr. Chapin was pronounced by Dr. Charles P. Hooker. The building was presented by Mr. George D. Pratt and accepted in behalf of the trustees by Col. Stanhope E.

Blunt. The building is given in memory of the late Dr. Chapin of Springfield by some of his many friends.

SOCIAL SERVICE AT THE MASSACHUSETTS GENERAL HOSPITAL.—On Tuesday of last week, February 9, the annual meeting of the Social Service Department of the Massachusetts General Hospital was held in the out-patient department under the chairmanship of Dr. Richard C. Cabot. Dr. Frederick A. Washburn spoke on "Advantages and Limitations of Social Service from the Point of View of an Administrator"; Dr. Hugh Cabot on "Hospital Social Service as a Laboratory of Democracy," and Dr. W. S. Wright on "Social Work as Seen by an Interne."

INFANT MORTALITY IN BOSTON.—At a recent meeting of the Board of Trustees of the Boston Milk and Baby Hygiene Association, it was reported that the total number of babies under the supervision of the Association in January, 1915, was 1815, an increase of nearly 500 over the corresponding month last year. The Association voted to support a bill (Senate No. 78) "To Protect the Public Health Against Danger from the Sale of Impure Milk and Cream."

During the past four years Boston has risen from seven to second rank among the ten largest cities in the United States with an infant mortality rate below 160. The present standing of these cities in regard to infant death rate per thousand births during the first year of life is as follows:

New York	94.6
Boston	103.4
St. Louis	103.4
Pittsburgh	115.2
Cleveland	116.4
Philadelphia	117.6
Buffalo	121.5
Detroit	122.4
Chicago	132.7
Baltimore	154.6

Mr. George R. Bedinger, director of the Boston Milk and Baby Hygiene Association, has recently made the following statement of the increase in work of the Association during this period:

"As the main agency doing directly preventive and educational work for babies, the Milk and Baby Hygiene Association during 1910 cared for 1870 babies in nine milk stations. In four years the increase has been over 100% in babies supervised and 33% in baby health stations.

"During 1914 in 12 milk stations the Association supervised the health of 4097 babies. Nurses' visits to the homes of the little babies rose from 38,805 in 1910 to 50,221. In 1910 there were 10,847 visits by mothers and babies to the 'well baby clinics' held weekly at the milk stations.

"In 1914 these visits to consult the physicians about the babies' feeding and care were 19,673."

In this connection it is of interest to note the recently published annual report by Miss Julia C. Lathrop, chief of the Federal Children's Bureau to the department of labor, on the investigation into infant mortality made by the Bureau at Johnstown, Pa. In the poorest sections of this city the infant mortality was 271 per thousand, more than five times that of the better residential districts.

"Babies whose fathers earned $10 a week or less, died at the rate of 256 per thousand, while those whose fathers earned $25 or more a week, died at the rate of 84 per thousand. Artificially fed babies died at a much more rapid rate than breast fed babies. Only 46.6 babies per thousand died under one year of age, when breast fed at least three months, as against 165.8 per thousand who died when fed with artificial foods. When mothers were employed a large part of the time in heavy work, babies died at a rapid rate. In one group of nineteen mothers whose babies all died, fifteen had been keeping lodgers. In houses where water had to be obtained from outside, the death rate was found to be 198 per thousand, as against 118 per thousand in houses where water was supplied by pipes."

Similar investigations are now being made by the Bureau at Lancaster, N. H., and Saginaw, Mich. In the preface to her report Miss Lathrop writes as follows of the general social importance of the subject of infant mortality:

"Infant mortality is a subject of profound social importance. The modern view has ceased to be fatalistic; infant mortality is now regarded as a preventable waste, injurious to survivors as well as destructive to infants, and cruelly increasing the burden of rearing a family. Sir Arthur Newsholme, the great English authority, has said, 'Infant mortality is the most sensitive index we possess of social welfare and of sanitary administration, especially under urban conditions.' Naturally, the United States has as yet no means of measuring the extent and significance of its infant mortality. If it were practicable, it would be illuminating to visit each one of the 2,500,000 children who, it is estimated, are born in this country yearly, and to take note of the varying social and economic conditions under which some 300,000 of them die and the others survive. As this is manifestly impossible, the nearest approach is to consider certain communities typical of the whole, and it is believed that in the course of a few years' study such data can be presented as will give the United States a fairly adequate measure of the conditions under which American-born infants survive or perish, and of the possibilities of modifying those conditions by local action."

The lowest infant mortality rate in the world is that of New Zealand which, in 1910, was only 51 and in 1913 only 38 per thousand births.

Massachusetts Medical Society.

Stated Meeting of the Council.

A STATED meeting of the Council was held at the Boston Medical Library, February 3, 1915, at 12 o'clock, noon, the president being in the chair and the following seventy-one councilors present:

Barnstable.
  E. E. Hawes.

Berkshire.
  L. A. Jones.

Bristol North.
  A. R. Crandell.
  R. D. Dean.

Bristol South.
  E. F. Cody.
  J. H. Gifford.
  H. G. Wilbur.

Essex North.
  R. V. Baketel.
  F. W. Snow.

Essex South
  N. P. Breed.
  W. G. Phippen.
  H. E. Sears.

Franklin.
  G. P. Twitchell.

Hampden.
  T. L. Bacon.
  J. M. Birnie.
  G. D. Henderson.
  M. B. Hodskins.

Middlesex South.
  F. E. Bateman.
  J. E. Cleaves.
  C. H. Cook.
  H. F. Curtis.
  G. W. Gay.
  A. A. Jackson.
  C. E. Prior.
  E. H. Stevens.
  J. O. Tilton.

Norfolk.
  G. G. Bulfinch.
  P. W. Carr.
  H. C. Ernst, *chairman.*
  G. W. Kaan.
  E. W. Finn.
  G. H. Francis.
  T. F. Greene.
  T. J. Murphy.
  W. H. Robinson.
  B. E. Sibley.
  C. F. Stack.

Norfolk South.
  O. H. Howe.
  A. E. Paine.
  F. G. Wheatley.

Suffolk.
  J. W. Bartol.
  H. I. Bowditch.
  F. M. Buckingham, *treas.*
  W. L. Burrage, *sec'y.*
  David Cheever.
  E. A. Codman.
  J. A. Cogan.
  W. H. Devine.
  C. Frothingham, Jr.
  W. H. Grainger.
  C. M. Green, *chairman.*
  W. C. Howe.
  H. T. Hutchins.
  R. W. Lovett.
  J. L. Morse.
  A. G. Richardson.
  M. A. Smith.
  R. M. Smith.
  G. B. Shattuck, *chairman.*
  Beth Vincent, *chairman.*
  H. F. Vickery.
  C. F. Withington.

Worcester.
  W. P. Bowers.
  C. A. Church.
  W. J. Delahanty.
  Homer Gage.
  David Harrower.
  G. O. Ward.
  L. F. Woodward.
  S. B. Woodward.

Worcester North.
  H. W. Page.

The minutes of the last meeting were read and accepted.

The president read an obituary of Councilor Harry Clifton Boutelle, who died January 24, 1915 (see Boston Medical and Surgical Journal, February 4, 1915, page 200.)

The reports of the committee appointed to consider the petitions of the following named Fellows for reinstatement in the Society were adopted, voting their restoration to the privileges of Fellowship provided they discharge all indebtedness within one month: A. W. Parsons, W. H. Coon, J. W. O'Connor, J. F. Moore. Petitions for reinstatement from the following were referred to committees: J. A. Ceconi, F. X. Mahoney, R. F. Burns, C. H. Phillips, E. O. Tabor, J. J. Sullivan.

The president nominated and the council elected the following delegates:

To National Legislative Committee and Council on Health and Public Instruction of the American Medical Association at Chicago, M. J. Rosenau. To Conference on Medical Education and Meeting of Association of American Medical Colleges at Chicago, H. C. Ernst.

Members of House of Delegates, American Medical Association, for two years:

Hugh Cabot, Boston, Alternate, F. B. Lund, Boston.
B. W. Paddock, Pittsfield, Alternate, E. F. Cody, New Bedford.

To Rhode Island Medical Society:
A. S. MacKnight, Fall River, W. H. Butler, Fall River.

To Connecticut State Medical Society:
A. L. Cooley, Chicopee Falls, G. Z. Goodell, Salem.

To Main Medical Association:
C. H. Bangs, Lynn; F. W. Snow, Newburyport.

To New Hampshire Medical Society:
G. H. Gray, Lynn; W. H. Merrill, Lawrence.

Dr. R. I. Lee was appointed to fill a vacancy in the Standing Committee on Public Health.

The treasurer's report was read by Dr. Buckingham and the report of the Auditing Committee by Dr. Blakely (see page 277).

Voted, To accept the reports.

The following report of the Committee on Membership and Finance concerning membership, was read by Dr. Green:

The Committee on Membership and Finance makes the following recommendations:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Abbott, Stephen Wendell, of Lawrence.
Booth, Edward Chauncey, of Somerville.
Chipman, William Reginald, of Chelsea.
Driver, Stephen William, of Cambridge.
Gibbs, Locero Jackson, of Chicopee Falls.
Pillsbury, Warren Wilbur, of Newburyport.
Prescott, Charles Dudley, of New Bedford.
Robinson, Lucy Morton, of Brockton.
Sanborn, Edwin Aaron, of Somerville.
Stutson, William Peckham, of Cummington.
Tucker, Edward Tobey, of New Bedford.
White, Emory Lincoln, of Somerville.
Woods, George Lyman, of Springfield.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the by-laws:

Arms, Burdette Loomis, now of the University of Texas.

Bruce, Harold Milton, of Plymouth.

Dean, Charles Henry, now of Salisbury, Vt., formerly of Northampton.

Eaton, William Edward, Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

Gaffney, Mary Evangeline, now at The Convent, Newport, R. I.

Karsner, Howard Thomas, now of Western Reserve School of Medicine, Cleveland, Ohio.

Parker, Edwin Monroe, now of Reed's Ferry, New Hampshire.

Robinson, Samuel, now at the Mayos' Clinic, Rochester, Minnesota.

Smith, Earl Moulton, of 248 E. Main St., Amsterdam, N. Y.

Wright, George Hermann, of New Milford, Conn.

3. That the following named Fellow be allowed to resign, as requested by the Committee on Ethics and Discipline:

Papoulacos, Panagiotis, of 176 Huntington Avenue, Boston.

4. That the following named Fellow be deprived of the privileges of Fellowship for non-payment of dues, under the provisions of Chapter I, Section 8, of the by-laws:

Brown, Joseph, formerly of Worcester, now of Des Moines, Iowa.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

Voted, To accept the report and adopt its recommendations.

Dr. Beth Vincent reported for the Committee of Arrangements and sketched the plans of his committee for the annual meeting. Two alternatives were outlined, one to have the meeting at the Copley-Plaza Hotel as last year, and the other to have most of the meetings in the Boston Medical Library and the dinner elsewhere. The committee favored the former plan at an estimated expense to the Society of $1,775, an itemized estimate being furnished. Dr. G. W. Gay spoke on a proposition which had been advanced at a previous meeting of the Council, namely, that those who attend an annual dinner of the society should defray all of the expense of the dinner. He favored such a plan in the interests of economy and to promote the affiliation between the BOSTON MEDICAL AND SURGICAL JOURNAL and the Society and made a motion to this effect. After considerable discussion the motion was put to a vote and lost.

Dr. G. B. Shattuck reported for the Committee on Publications and Scientific Papers that Dr. Theodore C. Janeway will be the Shattuck Lecturer in the year 1916.

The following report of the Committee on Membership and Finance, concerning finance, was read by Dr. Green:

The Committee on Membership and Finance makes the following recommendations:

1. That a dividend of $4000, from the balance remaining in the treasury on December 31, 1914, be apportioned among and paid to the district societies, in accordance with the provisions of Chapter VII, Section 3, of the by-laws.

2. That appropriations for Standing Committees for the financial year 1915 be made as follows:

For the Committee of Arrangements..........	$1775
For the Committee on Medical Education and Medical Diplomas.........................	50
For the Committee on State and National Legislation	250
For the Committee on Public Health.........	75

3. That to make possible the continuance of the affiliation of this Society with the BOSTON MEDICAL AND SURGICAL JOURNAL, the Council appropriate for the year 1915 the sum of $9500, this sum to be reduced by such sum as may be raised by special subscription.

4. That the Advisory Committee representing the Massachusetts Medical Society on the Board of Management of the BOSTON MEDICAL AND SURGICAL JOURNAL be authorized by the Council to secure pledges towards the maintenance of the JOURNAL.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

After several questions by councilors had been answered by Dr. Green and the president it was,

Voted, To accept the report and adopt its several recommendations.

Dr. E. E. Hawes spoke on the desirability, from the standpoint of Fellows who live at a distance, of having the annual dinner in the middle of the day, because of the amount of time required to attend a dinner in the evening. No action taken.

Dr. Gay referred to a suggestion made in an editorial in the BOSTON MEDICAL AND SURGICAL JOURNAL of October 1, 1914, entitled "The Minister and the Doctor," to the effect that there might be coöperation between the Massachusetts Federation of Churches and the Massachusetts Medical Society to perfect a plan of joint action to better health conditions in the State. He read this extract from a letter written to the secretary by the Rev. Samuel C. Bushnell, chairman of the Committee on Philanthropies of the Federation, dated January 27, 1915:

"At a meeting of the Committee on Philanthropies of the Massachusetts Federation of Churches it was voted, this afternoon, to overture the Council of the Massachusetts Medical Society to see if some method of coöperation might not be devised whereby the doctors and ministers throughout the state might get together for the benefit of their local communities.

"The plan met with the heartiest approval of all present—six of our committee of seven, Hon. Mr. Luce of Somerville being absent. If your Council would appoint a committee to meet as many of our committee as could get together on the day chosen we could discuss the general question and possibly reach some decision which might appeal to both organizations."

The president said that the Federation of Churches was composed of representatives of practically all the religious denominations and he understood that the Committee on Philanthropies was ready to favor desirable legislation, as well as to work with a Committee from our Society. On motion by Dr. Gay it was,

Voted, That the Committee on Public Health of the Massachusetts Medical Society be hereby authorized to coöperate with the Committee on Philanthropies of the Massachusetts Federation of Churches in such activities, having for their object the improvement of sanitary and social conditions of this Commonwealth, as the said committee may think wise and proper.

Dr. E. H. Brigham presented the following memorandum concerning an early meeting place and the fourth president of the Society:

In 1783 the land now substantially covered by the Phillips Building on the north corner of Tremont Street and Hamilton Place was occupied by what was called the "Manufactory House," which belonged to the Commonwealth of Massachusetts and had been used as a barracks during the Revolution. On March 20, 1783, the General Court passed a resolve permitting the Academy of Arts and Sciences and the Massachusetts Medical Society to make use of and improve the room in the Manufactory House, which had for some time past been occupied for a school by Mr. Vinal.

On February 13, 1784, the General Court passed a resolve that Samuel Phillips, Jr., Caleb Davis and John Rowe be a committee to make sale of the Manufactory House with the land thereto belonging. In pursuance of this resolve the estate was sold and by deed dated March 24, 1784, conveyed by this committee to the Massachusetts Bank. (Registry of Deeds, Suffolk County.)

"At a meeting of the American Academy of Arts and Sciences at the University in Cambridge, November 13, 1782,

Voted: That the Hon. Cotton Tufts, Esq., Ebenezer Storer, Esq., and the Rev. Mr. Howard be a committee to join with a committee, in case one should be appointed for the purpose by the Medical Society at their next meeting, in procuring a convenient room in the Town of Boston, in which both societies may hold their respective meetings."

"At a meeting of the American Academy of Arts and Sciences, in the County Courthouse and by adjournment in the Manufactory House in Boston, May 27, 1783,—

Whereas, The General Court did by a Resolve dated (no date given) grant to the American Academy and the Medical Society the use of a room in the Manufactory House in Boston in which to hold their respective meetings during the pleasure of the Court; and whereas certain repairs are necessary in said room,

Voted: That the Hon. Cotton Tufts, Esq., Ebenezer Storer, Esq., and the Rev. Simeon Howard be a committee to join a committee of the Medical Society in making such repairs as they may judge necessary at the expense of the two societies equally; and in framing such regulations respecting the room as they may think proper and report at the next meeting."

"A Petition of Mons. John Mary requesting liberty to teach the French language in the room granted to this Academy and the Medical Society by the General Court was read, whereupon

Voted: That Ebenzer Storer, Esq., the Rev. Dr. Cooper and the Hon. Robert T. Paine, Esq., be a committee to join a committee of the Medical Society (in case one should be appointed) in considering and determining on said Petition. their doings to be valid 'til the further order of the Academy." (Records American Academy Arts and Sciences.)

Three meetings of the Academy were held in the "Manufactory House," December 31, 1783, January 20, and April 1, 1784.

The Hon. Cotton Tufts, Esq., mentioned is Dr. Cotton Tufts of Weymouth, a state senator, who was an original incorporator and second vice-president of the Massachusetts Medical Society, 1785-1787; and fourth president, 1787-1795; also an incorporator of the American Academy of Arts and Sciences.

His portrait, given to the Library by William Tufts Brigham, A.B., Harvard, 1862, of Honolulu Hawaii, is now in the Fifield Room of the Boston Medical Library and was shown to the Council by the librarian.

Dr. Gay addressed the Council on the need of better care for the inebriates of the State. He said that it had been suggested that non-criminal inebriates be given an indeterminate sentence to the Norfolk State Hospital, working through the out-patient department in Boston, rather than follow the present custom of committing them to the House of Correction at Long Island, as is the case in the County of Suffolk. The latter plan, while not being humane, was a very large expense to the county. He thought that the Society should work to forward this movement. The chairman said that the Committee on State and National Legislation was prepared to promote this proposition.

Adjourned at 1.20 p. m.

Walter L. Burrage, *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY.

Treasurer's Report for the Year 1914.

Mr. President and Fellows of the Society:

Your treasurer has to report the finances of the Society for the year 1914 as follows:

Receipts.

Balance January 1, 1914		$11,990.74
Assessments paid to District Treasurer:		
Barnstable	$ 173.00	
Berkshire	353.00	
Bristol North	287.00	
Bristol South	616.00	
Essex North	774.00	
Essex South	991.00	
Franklin	173.00	
Hampden	979.00	
Hampshire	311.00	
Middlesex East	370.00	
Middlesex North	572.00	
Middlesex South	2,334.00	
Norfolk	2,047.00	
Norfolk South	255.00	
Plymouth	494.00	
Suffolk	3,156.00	
Worcester	1,235.00	
Worcester North	343.00	
		$ 15,463.00

Assessments to Treasurer		1,101.00
Assessments at annual meeting		285.00
Sale of dinner tickets		715.00
Interest on Massachusetts bonds		560.00
Interest on funds subject to check:		
New England Trust Co.	$181.19	
Old Colony Trust Co.	127.17	
		308.36
Interest on annuity policies of the Mass. Hospital Life Ins. Co.		867.86
Interest on Savings Bank deposits		164.58
Sale of copy of Directory		1.00
		$31,456.54

Expenses.

President's expense:		
Printing and postage	$ 12.65	
Traveling	11.68	
		$24.33
Secretary's expense:		
Record book	$ 1.25	
Printing and stamped envelopes	333.65	
Stenographers at Section meetings	70.00	
Engrossing	20.30	
Addressing programs	15.00	
Directories	12.00	
Incidentals	29.29	
		$481.49
Librarian's Expense:		
Index cards	$ 14.00	
Files	3.50	
Postage and expressage	142.05	
Printing and postal cards	56.50	
Typewriting	10.00	
		$226.05
Treasurer's expense:		
Printing and stamped envelopes	$152.17	
Stationery and account books.	15.15	
Clerical work	60.74	
Treasurer's bond	37.50	
Rent of box, Old Colony Trust Co.	10.00	
Incidentals	4.33	
		$279.89
Bank charges		1.00
District Treasurers' expense:		
Commissions	$773.15	
Postage, printing, etc.	229.51	
		$1,002.66
Supervisors' expense		24.88
Censors' expense		540.45
Shattuck lecture		200.00
Cotting lunch		286.05
*Boston Medical and Surgical Journal		3,175.75
Delegates to American Medical Association and its committees		286.67
Rent		750.00
Salaries		1,700.00
Return of overpaid assessments less commission		26.60
Annual dividend		3,000.00
Committee on publications and Scientific Papers:		
Printing and Distributing		869.55
Committee on Ethics and Discipline:		
Mileage		$ 12.00
Committee on State and National Legislation:		
Legislative Bulletin	$ 10.00	
Stenographer	22.78	
Printing envelopes and stationery	25.50	
Incidentals	48.00	
		$106.28
Committee of Arrangements:		
Bond boxes	$ 1.80	
Printing and stamped envelopes	107.00	
Stationery	.58	
School supplies	2.55	
Badges	4.90	
Stereopticon	5.00	
Clerks	60.00	
Police	32.00	
Music	125.00	
The Copley-Plaza Hotel	3,053.75	
Cigars	77.61	
		$3,470.19
Committee of Chairman of the Committee of Arrangements and Chairmen of Sections:		
Mileage		7.22
Committee of Nine:		
Stenographer	$ 28.18	
Mileage	50.54	
		78.72
		$16,549.78

Balance January 1, 1915	$14,906.76
Balance January 1, 1914	11,990.74
Increase over last year.	$ 2,916.02

Against this increase must be set an indeterminate sum representing the amount still to be paid to the Boston Medical and Surgical Journal.

The balance is distributed as follows:

Deposit in the New England Trust Co.	$7,242.63
Deposit in the Old Colony Trust Co.	7,697.13
	$14,939.76
Deduct checks still out	33.00
Balance called for	$14,906.76

The change in the deposit from the Bay State Trust Co. to the Old Colony Trust Co. is because of the consolidation of these two institutions.

Permanent Investments.

Shattuck Fund:	
Annuity policy, Massachusetts Hospital Life Insurance Co.	$ 9,166.87
Phillips Fund:	
Massachusetts 3½ per cent. bond	10,000.00
Cotting Fund:	
Deposit in Roxbury Institution for Savings	1,000.00
Deposit in Provident Institution for Savings	1,000.00
Deposit in Suffolk Savings Bank	1,000.00
Permanent Fund:	
Annuity policy in Massachusetts Hospital Life Insurance Co.	11,253.30
Massachusetts 3½ per cent. bonds	6,000.00
Deposit in Franklin Savings Bank	1,074.48
	$40,494.65

There has been no change in these funds during the year.

Edward M. Buckingham, *Treasurer.*

---

* It appears by bills presented by the Journal in July and October, that up to that time $3,309 had been collected upon the guarantee subscriptions.

REPORT OF AUDITING COMMITTEE.

The undersigned, a duly appointed committee, having examined the books of the Treasurer, find them correctly cast and properly vouched, and also that he has in his possession the securities called for.

DAVID N. BLAKELY.
JAMES LINCOLN HUNTINGTON.

Boston, Feb. 1, 1915.

Obituary.

THOMAS BRYANT, F.R.C.S., M.Ch., M.D.

MR. THOMAS BRYANT, who died in London, on Dec. 30, 1914, was born in Kennington on May 26, 1828, the son of a surgeon. He was educated at King's College, and in 1846 entered the Guy's Hospital Medical School. He qualified as M.R.C.S. in 1849 and as F.R.C.S. in 1853. In 1857 he was appointed assistant surgeon at Guy's Hospital, and in 1858 lecturer on clinical and in 1859 on operative surgery. In 1871 he became full surgeon at Guy's Hospital and in 1872 first published his famous text-book on the practice of surgery, a second edition of which appeared in 1876 and a third in 1879. This work was a monument in the progress of surgery since, prior to its time, there had been published but one other large system of surgery, that of Erichsen.

In 1875 Mr. Bryant was appointed lecturer on surgery at Guy's Hospital and continued active there in the practice of his profession until his retirement as consulting surgeon in 1888. In that same year he delivered the Hunterian Oration and in 1889 the Bradshaw Lecture. From 1891 to 1894 he was president of the Royal College of Surgeons of England and from 1891 to 1894 served as its representative on the general medical council. In 1896 he was appointed Sergeant Surgeon Extraordinary to Queen Victoria and subsequently became Surgeon in Ordinary to King Edward and King George. He was a member of the Medical Society of London, the Hunterian Society, the Clinical Society and the Royal Medical and Chirurgical Society. He had received honorary medical degrees from the Royal University in Ireland and the University of Dublin.

Mr. Bryant was married in 1862 and is survived by three daughters and four sons.

Mr. C. H. Golding-Bird, writing of Mr. Bryant in the *Lancet*, speaks as follows of the latter's personal characteristics:—

"A handsome man, of commanding presence, with a personality that impressed itself on others, genial, kindly, and always ready to lend an ear to any that sought his advice. Bryant was the friend of all who knew him, whether student, colleague, or patient. The student felt that in him he had a friend to whom he could go for advice at all times, and never fail to get his sympathy and help. To his dressers' mistakes he was lenient, and whilst he never overlooked anything nor hesitated to correct, he at the same time explained and instructed so as to avoid a repetition of a similar mischance. As a colleague he was valued by all, and though 'once upon a time' there arose a serious difference between himself and a colleague that even threatened the peace of the hospital, he met his quondam friend in the open court of the operating theatre at the instance of their other colleagues, and both men publicly shook hands and thus closed the incident forever. Beyond this nothing ever happened to disturb the harmony with which Bryant performed his public duties at Guy's Hospital; and those who knew him personally will always cherish the memory of him as of a true friend, a courteous gentleman, and if not exactly a pioneer, at any rate a splendid example of the British surgeon."

Miscellany.

THE HEALTH OF YORK.

A BRIEF review of the situation at York, Maine, in regard to public health is not amiss at the opening of the new year. In the late summer and early autumn of the past year there were a number of cases of typhoid fever in York Harbor and the vicinity. While these cases were not enough in number and severity to constitute a serious epidemic, the mere presence of the disease in such a popular sea-side resort naturally gives rise to considerable alarm. York met the situation in the following way, which should serve as a model to any other town in similar circumstances. There was no attempt to conceal the fact of the existence of the disease and its extent, the authorities very properly feeling that the way to meet any danger was to face it in the open.

At a meeting of the Village Improvement Society, a committee was appointed to confer with the selectmen and the board of health. As the result of this conference, a town meeting was held late in September and money was voted to meet the cost of a sanitary survey of the town which was made by Professor Milton J. Rosenau of Harvard University. While nothing very startling was discovered, a situation was found which showed that there were conditions which might, and probably did, affect the public health. As a result of the report of Professor Rosenau, a town meeting was held at which it was voted to employ a health officer, and $2500 was voted for his salary and the expenses incidental to the work.

The town is to be congratulated upon the selection of Mr. William Eustis Brown as its health officer. Mr. Brown has had a thorough training in sanitation and preventive medicine both at the Massachusetts Institute of Technology and at Harvard University. He is a graduate of the School for Health Officers and has had a varied and wide experience in sanitary work of all kinds, and is well qualified to carry on the work.

This step which York has taken at once places it in the forefront of progress as far as health is concerned. York has determined to safeguard its citizens and all strangers within its gates and give them the security of health that a well ordered sanitary department can furnish. Although blest with natural advantages of an unusual order and admirable location, a charming scenery both of sea and country, and a delightful climate, York is not going to depend upon nature and luck for a clean bill of health. It has been said that "public health is purchasable," the price is moderate and the action of York shows that she intends to enjoy the best attainable protection from disease. Such protection ranks far above any other advantage which a summer resort can enjoy. Many resorts have acted on the policy that a good climate, charm of location and beauty of scenery are sufficient inducements to attract the summer visitor; but nowadays people are more wary and wisely look for more than this before selecting a vacation playground. The visitor wants a clean bill of health for the resort he has chosen and is entitled to have one. York will now be able to furnish this assurance.

There may be some obscurity as to the duties of a health officer in a small town such as York. Cases of communicable disease may arise in any community. Typhoid fever lurks in almost every country district in the land, always ready to strike if the opportunity offers. Some of the 8000 people from various parts of our broad land who visit York annually may introduce infection. It will be one of the duties of the new health officer to ascertain the existence of infectious diseases and take immediate measures to prevent their spread. Cases of such diseases will be traced to their source and practical preventive measures will be applied without delay.

Furthermore, the health officer will examine the sources of water supplies and analyze them. He will inspect the milk supply, visit and examine dairies, see that cows are healthy, that the milk is gathered in a cleanly and safe manner. This is of great importance as disease is often spread through contaminated milk. A little advice as to dairy management is often of great advantage to the milk producer.

Other foods, such as oysters, clams, meat, lettuce, etc., will be inspected by the health officer in order to be sure that the dealers comply with the pure food laws. The health officer will also inspect markets, kitchens, provision shops and store rooms where food is handled and kept. He looks after nuisances, prevents pollution of the beaches, conducts a campaign against flies and mosquitoes, supervises the harvesting of ice and performs many other duties which are included in the art of hygienic living. He keeps the vital statistics in accordance with modern methods. With careful records he is able to compare the health of York with other communities and to determine whether the measures he is taking are effective; and to trace the progress of health and disease, of births and marriages, and other vital factors affecting every member of the community.

York must some time in the not distant future look forward to the installation of a sewage system. This work must not be undertaken hastily, and information must be collected which will be of service in providing a proper system. To collect such information and to study the local conditions will be a part of the duties of the health officer.

In connection with the position, a chemical and bacteriological laboratory will be equipped where analyses may be made. This laboratory also will be prepared to make blood tests in order to recognize early cases of typhoid fever, to examine throat cultures in order to diagnose diphtheria, and to generally assist the physicians in the early recognition of other infections and to ascertain the time when such cases may be released from quarantine so that they will not menace the community as bacillus carriers.

We may all feel more secure in the health of our families and particularly of our children now that such a work has been undertaken.

(Signed)

Joseph P. Bragdon,
Chairman of Board of Selectmen.
Willie W. Cuzner, M.D.
Secretary of Board of Health.
W. T. Councilman, M.D.
Chairman of Committee of Village Improvement Society.

◆

CINCHONA OR CHINCHONA

In the issue of the *Medical Press and Circular* for Jan. 20, a Dublin correspondent calls attention as follows to the spelling and history of the name Cinchona, or Chinchona, applied by Linnaeus to Peruvian bark.

"The new edition of the *British Pharmacopoeia* has, I fear, perpetuated the Linnaean spelling Cinchona. Linnaeus sought to honour the memory of the Countess de la Chinchon when in 1742, he named the natural order from which the chinchona bark is obtained Chinconacae. As the bark was usually put on the market in the condition of powder, it came to be known as the

'Countess's powder,' 'Jesuit's powder,' and the 'English remedy,' or 'Talbot's Wonderful Secret for Curing Agues.' On the proposal to alter the spelling by the insertion of the letter h after the initial letter, Murray writes: 'The accepted form is too deeply rooted in botanical and chemical nomenclature to make this expedient.' Withal we should try to perpetuate the name of the illustrious Chinchon family with the introduction of this one of our most precious drugs. The title illustrious is justly borne by the family of the beautiful Lady Ana de Osorio, whose ancestor Ramiro, King of Galicia in 843, is said, by Spanish chroniclers, to have had Saint James as a companion-in-arms at his great victory over the Moors at Clarijo, in which the apostle gave the battle cry of 'Santiago' to Spain. The Lady Ana was born in 1599, and at 16 years old was married to Don Luis de Velasco, who in 1617 became Marquis of Salinas. Two years later the Lady Ana, still young and very beautiful, became both a widow and an orphan. In the autumn of 1621 she married Don Luis Geronimo Fernandez de Cabrera y Robadilla, fourth Count of Chinchon, a descendant of a very ancient family of Catalonia. Soon after their marriage they entertained at Sagovia, their country seat, Charles Prince of Wales and his companion, the Duke of Buckingham. And there are good grounds for believing that it was there that the Prnce saw the deaf mutes who had been taught by Pedro Ponce to speak. Sir K. Digby tells us that one of the mutes, Don Pedro Velasco, 'spoke and wrote Latin as well as his mother tongue.'

"In 1628 the Count of Chinchon was appointed Viceroy of Peru, and in 1629 made his public entry into Lima. During his viceroyalty he had the sources of the Amazon explored, he suppressed the revolt of the natives and reformed the conditions under which they lived.

"In 1636 an Indian of Malacotes made Don Francisco Lopez de Cañizares, Corregidor of Lima, acquainted with the properties of quinquina bark, and two years afterwards, when the Countess of Chinchon was suffering from tertian fever, the Corregidor sent her a supply of the native remedy. The medicine was administered by the Court physician, Don Juan de Vegt, and the Countess recovered. On the return of the Count and Countess to Spain in 1640 they were accompanied by their physician, Don Juan de Vega, who brought with him a supply of the valuable bark, which he disposed of under the name of the 'Countess's powder.' "

[NOTE: The error was Linné's: etymologically the name should be Chinchona.—ED.]

Correspondence

REGISTRATION OF NURSES IN MASSACHUSETTS.

BOSTON, MASS., February 5, 1915.

Mr. Editor: Your contention in your editorial criticism of the Bill to amend the requirements for nursing in Massachusetts, seems to be first, an endorsement of the report of the Committee appointed by the New York State Medical Society, and second, that conditions in Massachusetts are satisfactory as they are, and do not call for any change.

Allow me to say that your quoted excerpt from the New York Committee report is simply an endorsement of the work done by the small hospitals in training nurses.

The Massachusetts Board of Registration of Nurses is in sympathy with that statement, and nowhere in this proposed amendment can there be found any expression, direct or implied, which shows criticism of, or antagonism to, the work of small hospital training schools, or the graduates of such schools.

If any one reads into the proposed amendment to the law anything of this sort, it must be the result of prejudice or suspicion.

Further, where you use the words "must get along without trained nursing when sick," and again, when you state that, "Perhaps in the future the nursing profession may provide trained services for all the people for good pay, for small pay, or for no pay at all, just as now the medical profession furnishes skilled care to all the sick," you seem to convey the impression that this proposed amendment will interfere with the practical, or experienced, or the community nurse, who has gradually become useful through her adaptation to the demands of the sick, under the instruction of the physician in charge.

Again, you misinterpret the purpose of this Bill:

The Bill only aims at registration of all nurses in Massachusetts who are useful up to their capacity. The only hardship imposed is the very small amount of time and expense involved. Under this Bill, if enacted into law, every nurse who applied, and was vouched for by a reputable physician, and such other people as might be determined on, would become registered if she showed ordinary intelligence.

The purpose of this Bill is to make it possible to keep some people from being registered, or to take away the right to act as a nurse if a person should demonstrate unworthiness.

For example, a nurse might be convicted of theft. Do you contend that she should be allowed to continue as a nurse? A nurse allowed a patient to develop an exfoliating dermatitis of the whole back and thighs through improper care and neglect. Should she be allowed to repeat this?

A nurse infected a member of a family with the gonococcus. Would you want her to repeat that process?

Nurses have aided and abetted abortionists. Should these people be let alone?

Under our present law, any nurse may do anything from gross carelessness to the most advanced criminality, and so long as she is out of jail she can continue her work.

But you say the the responsibility rests with the physician. Families often select their own nurses, for personal or financial consideration, and the doctor acquiesces unless he knows of some reason to the contrary.

Do you want each doctor to find out for himself that a nurse is incompetent and should not occupy this position of trust? Assume that a nurse loses the confidence of the people in one community, there is nothing to prevent her going to another city and starting all over again.

I agree with those who say that these illustrations are not common. I fully appreciate the faithful work and high ethical sense of the great majority of nurses, but there are exceptions. If we eliminate the few unworthy ones, there will be more confidence in this profession.

Before dealing with this matter relating to the registration of nurses, it would seem that there are more weighty questions which should receive at least equal consideration, such as attacks which are being made upon medical practice in some of the Bills which you have not seen fit, as yet, to make note of in your editorial column. Would it not be well to devote an equal space to some of the following Bills:

Providing for the registration of chiropractors.

Providing for the registration, without examination, of physicians from without the state, and for a less fee than is required of our own physicians.

Providing for the registration of those who treat by the use of herbs. This Bill is introduced with the intent to provide for the registration of a certain person, and is, therefore, class legislation.

Again you say, "That the Board of Registration of Nurses should have supervision over the training school for nurses is a debatable point and does not correspond with the practise in the case of the Board of Registration in Medicine and the medical schools."

Permit me to call your attention to the fact that no medical school can legally confer a degree upon its graduates unless authorized by the Legislature so to do, but there is nothing to prevent any training school from conferring diplomas upon its graduates, and a well-known correspondence school does so confer them.

The proprietor of a pseudo-medical institution in this city, was recently convicted and fined for granting degrees without being authorized by the state so to do.

I would very much like to have you call attention to any other features of this Bill which you do not approve of.

Respectfully,
Walter P. Bowers, M.D.

A MISREPRESENTATION CORRECTED.

Boston, Mass., February 4, 1915.

Mr. Editor: In the February number of *McClure's* magazine, I am quoted in an article by R. H. Schauffler as backing Bernard Shaw's charges against the medical profession, except his attitude on animal experimentation. Shaw's attack is summarized in his own words, including the following sentence: "Most doctors have no honor and no conscience." Other sentences in Shaw's habitual exaggerative style follow and my approval of them all is assumed. The facts of the matter are as follows:

In the *Survey* of June 3, 1911, I wrote, at the request of that magazine, a review of Shaw's play entitled, "The Doctor's Dilemna," and said that as regards "Mr. Shaw's principal theses and in the main, I find myself heartily in agreement with him." I did not suppose that anyone would take Shaw seriously enough as to suppose that a ridiculous calumny, such as the statement that "most doctors have no honor and no conscience" would be regarded as a significant or an important remark. It should go without saying that I have no sympathy with such a statement, as I believe the medical profession to be as honorable and conscientious a body of men as any in the country. In the article on which Mr. Schauffler's misstatement of my position is founded, I summed up what in my opinion were the just offences of our profession, offences, which we all recognize and deplore. I specified such shortcomings as these,—that we do not tell patients with sufficient vigor the truth about their habits and their own responsibility for disease; that we sometimes foster cases of imaginary illness; that we sometimes perform unnecessary operations; that feesplitting and other abuses are widespread. No one, I suppose, will doubt these facts and no one will have much doubt that they will continue as long as the doctors of the country are as miserably poor as at present. So long as the economic status of the doctor is what it is, we cannot look for much improvement in that direction.

This was Shaw's belief about the whole matter and it is mine. It is not a question of blaming anybody but of getting something done. That "something" is to diminish the number of doctors by the raising of the standards of examining boards for the license to practise medicine. This is what the medical profession can do, of itself, and do immediately. It cannot, of itself, carry out the other greatly-needed reform which I believe is coming through the more intelligent activity of hospital trustees, namely, the payment of hospital physicians for full time work and the selection of these physicians by methods that exclude favoritism and the methods of the close corporation.

I should add that I understand perfectly Mr. Schauffler's unintentional mistake in the statement of my position. He is a man for whom I have the greatest admiration and I am sure he would not willingly misrepresent anyone.

Yours sincerely,
Richard C. Cabot, M.D.

INFORMATION ABOUT DR. SMILIE.

Boston Medical Library, Feb. 9, 1915.

Mr. Editor: Dr. Elton Romeo Smilie about whom inquiry was made by your correspondent in last week's issue of the Journal, received the degree of M.D. in 1845 from the Castleton Medical College, Castleton, Vt. He apparently settled for a time in Boston, but in 1849 he removed to San Francisco. He was dropped from The Massachusetts Medical Society in 1846 with many others who had removed from the state. In 1886, according to Polk, he was living at 649 Washington Street, San Francisco. No later record of him has been found.

Very truly yours,
"Assistant."

THE ROENTGEN DIAGNOSIS OF PULMONARY TUBERCULOSIS.

Providence, R. I., Feb. 2, 1915.

Mr. Editor: In the Journal for Jan. 28, 1915, there appears a review of "Progress in Tuberculosis," by Dr. J. B. Hawes, 2d, and Dr. P. C. Bartlett. In this paper several statements are made regarding the present status of the Roentgen diagnosis of pulmonary tuberculosis, which I do not believe it is fair to allow to stand uncorrected. One would infer from this report that the Roentgen rays have their greatest field of usefulness in the diagnosis of tuberculosis in infancy and childhood; and that, with regard to the early diagnosis in adults, they furnish merely a useful adjunct, much inferior to the other clinical methods of investigation. This is practically the same idea as is expressed in the very few scant paragraphs devoted to this subject in the recent booklet, by Hawes on "Early Pulmonary Tuberculosis."

As a matter of fact, the real situation is just the reverse. With children, the Roentgen examination usually furnishes merely helpful evidence, whereas with adults the Roentgen rays can establish definitely the presence or absence of pulmonary tuberculosis.

In infancy and childhood, the examination is largely limited to the discovery of enlarged tracheo-bronchial lymph-nodes. It is well-known that these glandular enlargements may be the result of non-tuberculous infections, such as measles, scarlet fever, pertussis, etc. Even if known to be tubercular, we cannot receive much help from the Roentgen rays in differentiating between *infection* and *disease*. This is the real problem involved, and, with respect to this, the clinical aspects of the case are the most important ones.

Of course at times other tuberculous processes may be discovered in the Roentgen examination of children's lungs, but the above are the most important findings. Indeed the entire matter of diagnosis of tuberculosis in children is far from satisfactory, and the Roentgen evidence is not yet standardized.

With adults, however, the situation is quite different. It is here that the Roentgen examination has its most valuable applications.

The physical conditions present in the pulmonary region are peculiarly suitable to the early detection of pathological processes by the Roentgen rays. The Roentgen plate is merely a record of differences in density of the various tissues through which the rays pass. The greater the difference in density between adjacent structures, the more striking will be their differentiation upon the sensitive plate. In the gaseous content of the pulmonary alveoli we have a medium which allows the Roentgen rays to pass through with only the very slightest amount of absorption. Against this background of practically no resistance, pathological processes of very minute size stand out with a sufficient degree of differentiation to be recorded definitely upon the plate. We can thus show the tubercles along definite paths of invasion. Of course lesions of purely microscopic size cannot be differentiated. But clinically we are only concerned with lesions which have already gone somewhat beyond this stage.

It is thus possible to detect an area of tuberculous infiltration not large enough to furnish any definite changes with percussion or auscultation, even though employed by the most expert. Everyone must admit that there are threshold limits to the data obtainable by the usual clinical methods. Fortunately, however, the physical conditions which I have outlined above permit the threshold of differentiation by the Roentgen rays to be much earlier.

These same principles apply, it is true, to children, but the difference in the pathological processes found in children renders the evidence less valuable than in adults.

These claims are not merely the "words of enthusiasts." They are the matured and calm conclusions of many able and conservative investigators, scattered throughout the world. It is of course true that this extremely early diagnosis cannot be made by superficial or careless Roentgen methods. It requires the use of the fluoroscope, several plates taken very carefully both in the antero-posterior and postero-anterior positions, especially the use of stereoscopic plates, and finally an extremely careful and conscientious study of these plates. When these methods have been carefully carried out it is not boasting to state that tuberculous lesions can be detected where the physical signs may be entirely lacking.

The clinical diagnosis of pulmonary tuberculosis based purely upon history and constitutional reaction may be correct in some cases, but it also frequently leads to the unnecessary treatment and segregation of non-tuberculous patients, including those suffering from syphilis, hyperthyroidism, etc. With such cases, a negative Roentgen examination, when the above-mentioned methods have been carried out, can easily separate them out. This negative phase of Roentgen diagnosis is just as important as its positive aspect. The Roentgen method today furnishes the only *safe* method of eliminating absolutely the possibility of pulmonary tuberculosis in the adult.

The statement that "in border-line cases the Roentgen rays cannot determine the activity of a tuberculous process" does not give a fair idea of the facts. This statement may be true in some few cases of extensive tuberculosis, where there is a mixture of old healed processes and fresher ones. Here the clinical data are of extreme importance. This problem however has no place in the *early* diagnosis of tuberculosis. Here we wish to know definitely whether there is a tuberculous process present or not. With the Roentgen method, in competent hands, this problem can be solved.

I have dwelt thus at length upon this subject as I do not think it is fair, in what purports to be a Review of Progress, to thus sweep aside, with a wave of the hand, valuable investigations that have added so much to our present diagnostic armament.

It is perhaps possible that the review represents merely the opinions of the authors, based upon their own personal experience. In that case, all I can say is that they have indeed been unfortunate in their choice of Roentgenologist.

Very truly yours,
Isaac Gerber, M.D.

RECREATION FOR MEN IN SANITARIA.

Boston, Harvard Hotel, Feb. 3, 1915.

Mr. Editor:

In most sanitaria, men, unless very ill or very aged, have an unnecessarily stupid time, which helps morbid introspection. Women are content to sit in their rooms, read and sew. Every well-conducted sanitarium should have first, a separate recreation room for men, with magazines and games, where they can get away from the women, especially in the morning. There ought to be within easy reach light gymnastic apparatus and a shower bath for use in the morning. Secondly, it should have a billiard table, preferably of the large English type. Third, there should be a workshop with desks, stock, tools, a lathe and possibly an instructor—men who teach sloyd can be hired at a nominal salary.

If a man is confined to the house by a three days' storm, he suffers from want of exercise, and the billiard table and workshop would help very much. The writer believes that passive exercise cannot take the place of active exercise, and he thinks the professional entertainer, not Harry Lauder, but women who recite character sketches, are very tiresome.

Yours very truly,
Edward L. Parks, M.D.

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession for the Week Ending February 6, 1915.

Dr. Lewis S. McMurtry of Louisville, Ky., and Dr. Charles A. L. Reed of Cincinnati, Ohio, have consented to become members of the Committee of American Physicians for the Aid of the Belgian Profession.

At the request of the Treasurer, the Executive Committee has arranged to have the accounts audited quarterly. The first audit will be made about the twentieth of March.

CONTRIBUTIONS.

Dr. Willard Barlett	St. Louis, Mo	$ 10.00
Dr. M. Manges	New York, N. Y.	15.00
Dr. G. D. Hale, P. A. Surg, U. S. N.	San Francisco, Cal.	10.00
Dr. Alfred Wiener	New York, N. Y.	10.00
Dr. John Woodman	New York, N. Y.	5.00
Dr. Robert T. Frank	New York, N. Y.	10.00
Cash—B	Pittsburgh, Pa.	10.00
Dr. R. O. Raymond	Flagstaff, Ariz.	10.00
Dr. A. Hymanson	New York, N. Y.	5.00
Dr. Mazyok P. Ravenel	Columbia, Mo.	15.00
Oklahoma State Med. Asso.	Muskogee, Okla.	100.00
Dr. H. H. Sherk	Pasadena, Cal.	25.00
Dr. Charles Lee King	Pasadena, Cal.	20.00
Dr. James Williamson	Philadelphia, Pa.	5.00
Dr. J. S. Kauffman	Blue Island, Ill.	5.00
Dr. John P. Treanor	Dorchester, Mass.	10.00
The Clinical Club of Albany	Albany, N. Y.	25.00

Dr. Thomas J. Watkins	Chicago, Ill	50.00
Dr. H. E. Oesterling	Wheeling, W. Va.	10.00
Dr. Leslie W. Schwab	Chicago, Ill.	2.00
Dr. A. Howard Smith	Marietta, Ohio	5.00
Dr. Woodson H. Taulbee	Maysville, Ky.	5.00

Total ....$ 362.00

Previously reported receipts......$2,166.00

Grand Total $2,528.00

Previously reported disbursements..$2,090.00

Disbursements week ending Feb. 6.. 440.00

Total disbursements..............$2,530.00

Deficit ....$ 2.00

F. F. Simpson, M.D., *Treasurer*.

NOTICES.

Physicians visiting the city will be cordially welcomed at the following clinics on the days and hours specified.

Boston City Hospital.—After January 1, 1915, public operations will be performed in the Surgical Amphitheatre each week, on Thursdays, Fridays and Saturdays, at 10 o'clock.

Thursday: First Surgical Service. Dr. Blake.

Friday. Third Surgical Service. Dr. Nichols, and Fourth Surgical (G-U) Service, Dr. Thorndike.

Saturday: Second Surgical Service. Dr. Lund.

Carney Hospital.—Dr. Bottomley and Dr. Mahoney will hold an operative surgical clinic every Wednesday at 9 a.m., and at the same hour on the same day Dr. W. R. MacAusland will hold an orthopedic clinic. All physicians are welcome to attend.

Massachusetts General Hospital.—1. A surgical clinic Tuesday, at 12, in the out-patient amphitheatre. 2. Operations in the Bigelow amphitheatre Saturdays from 10 to 1. 3. Operations in the Surgical Building except Sunday, from 9 to 1. 4. Daily surgical ward visits at which visiting physicians will be welcome. 5. Clinic in medicine and pathology Tuesdays at 12, by Drs. R. C. and H. Cabot and O. Richardson. 6. Medical clinic Thursday at 12, by Dr. D. L. Edsall.

Peter Bent Brigham Hospital.—Physicians visiting the city will always be cordially welcomed at the Peter Bent Brigham Hospital.

The medical visit takes place regularly every morning beginning at 10 o'clock.

Operations are usually going on throughout the forenoon in the surgical amphitheatre.

The surgical clinic is held in the clinical amphitheatre on Wednesdays at 12.30 p.m.

The medical clinic is held in the clinical amphitheatre on Mondays at 12.30 p.m.

The clinico-pathological demonstration is held in the clinical amphitheatre on Fridays at 3.30 p.m.

SOCIETY NOTICES.

New England Pediatric Society.—The thirty-sixth meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, February 26, 1915, at 8.15 p.m.

1. "Typhoid Fever in Children," Dr. Karlton G. Percy, Boston.
2. "Homogenised Milk. Its Possible Uses in Infant Feeding," Dr. Maynard Ladd, Boston.
3. "Luetic Bursopathy of Verneuil. Report of a Case. Congenital Type," Dr. William P. Coues, Boston.
4. "Some New Symptoms in Amaurotic Family Idiocy," Dr. Isador E. Coriat, Boston.

Light refreshments will be served after the meeting.

E. M. Buckingham, M.D., *Pres.*
Richard M. Smith, M.D., *Sec'y.*

The Harvey Society.—The ninth lecture of the series will be given at the New York Academy of Medicine, 17 West 43rd street, on Saturday evening, February 27th, at 8.30 p.m., by Prof. R. R. Bensley, University of Chicago. Subject: "Structure and Relationships of the Islets of Langerhans and Criteria of Histological Control in Experiments on the Pancreas."

APPOINTMENTS.

Arial W. George, M. D., Boston, has been appointed Assistant-Professor of the Department of Roentgenology, at the Tufts College Medical School. Dr. George has also been appointed on the consulting staff of the Carney Hospital.

Dr. George Burgess Magrath has been reappointed medical examiner for the County of Suffolk, Mass.

CORRECTION.

In the schedule of lectures in the School for Health Officers, published in the issue of the Journal for Jan. 28, Dr. Harrington's third lecture on School Hygiene should have been announced for Feb. 24.

RECENT DEATHS.

Dr. William Dugan Kelly, of Boston, died on February 9, of septicemia, apparently acquired by infection from a patient with acute tonsillitis. He was born at Lamont, Ill., in 1880, and removed to Boston as a boy, graduated from Boston Latin School and from the Harvard Medical School, receiving the degree of M. D. in 1903. Since 1904 he had served as a school physician for the Board of Health in this city. He was a Fellow of the Massachusetts Medical Society, a member and former president of the Boston Medical Society and a member of the Boston Medical Library. He was a member of the staff of Mt. Sinai Hospital, of the Sunnyside Day Nursery and of the Milk and Baby Hygiene Clinic at the Elizabeth Peabody House. He was unmarried.

Dr. Amos Hagar Peirce, a Fellow of The Massachusetts Medical Society, died at his home in West Newbury, February 9. He was a native of Lincoln, Mass., and was a graduate of the Boston University School of Medicine in 1882.

BOOKS AND PAMPHLETS RECEIVED.

The Tuberculosis Problem in Rural Communities by S. Adolphus Knopf, M. D. Reprint No. 243. Public Health Reports.

Index Catalogue Library of the Surgeon General, Second Series, Vol. 19. Washington, D. C.

Quain's Anatomy, Eleventh Edition, Vol IV. Part I. Osteology and Arthrology. Longmans, Green & Co., London.

Urinary Analysis and Diagnosis by Louis Heitzmann, M. D. William Wood & Co., 1915.

The Weekly Bulletin, Cincinnati, Jan. 30, 1915.

Impounded Water by H. R. Carter. Reprint No. 244 from Public Health Reports.

Bulletin of the State Board of Health of Maine, November, 1914.

Scarlet Fever, Its Prevention and Control by J. W. Schereschewsky. Supplement No. 21, Public Health Reports.

NEW WORK **JUST READY**

DISEASES OF THE

Bronchi, Lungs and Pleura

By FREDERICK T. LORD, M.D.

Instructor in Clinical Medicine, Harvard Medical School; Visiting Physician, Massachusetts General Hospital; Visiting Physician, Channing Home foi Consumptives, Boston

Octavo, 606 pages, with 93 engravings and 3 colored plates. Cloth, $5.00 net.

Dr. Lord has created a thoroughly practical treatise on diseases of the respiratory organs. Current knowledge, gained from a large hospital experience and an extensive study of the literature, is presented in these pages in such form as to be of value to students and practitioners, and to provide a basis for further study or research. A number of the sections are of great interest, notably those on bronchostenosis, pulmonary abscess and gangrene, x-ray examination and radioscopic findings. Special attention has been devoted to pulmonary conditions which simulate tuberculosis and their differential diagnosis. The discussion of pneumonia, which includes immunity, metabolism, preventive inoculation and special methods of treatment (including that by immune sera) is of unusual merit. Throughout the book the pathology of the various pulmonary diseases is discussed in detail, and its bearing on diagnosis and treatment is strongly emphasized.

PHILADELPHIA
706-8-10 Sansom Street

LEA & FEBIGER

NEW YORK
2 W. Forty-Fifth Street

Massachusetts General Hospital

A Course in "Medicine and Pathology"

will be given in the Pathological Amphitheatre by

DR. WILLIAM H. SMITH, *Visiting Physician of the Massachusetts General Hospital.*

AND

DR. OSCAR RICHARDSON, *Assistant Pathologist of the Massachusetts General Hospital.*

The complete clinical records of cases coming to autopsy will be presented by Dr. Smith, who will discuss the differential diagnosis. The Pathological findings will then be stated, the organs demonstrated and the Pathology of the cases discussed by Dr. Richardson. This will be followed by a general discussion of the cases viewed in the light of the completed records, and attention will be called to the newer diagnostic methods and to the broad principles of treatment involved. Microscopical preparations and lantern slides will be used when necessary.

There will be nine exercises on Wednesdays in the months of March and April between 3.15 and 5.15 P.M.

The course is open to graduates in medicine and medical students of the third and fourth year, subject to their acceptance by the hospital.

Women not admitted.

Given in connection with the Harvard Graduate School of Medicine.

A fee of $5.00 will be charged for the course. Application should be made to

DR. FREDERIC A. WASHBURN, *Resident Physician.*
MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

INDEX TO ADVERTISEMENTS

Agar Agar..........Mansfield Laboratories xx
Benger's Food.......... iii
Boston Laboratories.......... xiv
Fisk & Arnold..........Artificial Limbs ix
Fougera & Co..........Sulphaqua vi
French Lick Springs..........Pluto Water iv
Godfrey, Robert C.......... xviii
Harvard Dental School.......... xiv
Harvard Medical School.......... xiv
H.-O. Oatmeal.......... x
Jefferson Medical College..........Philadelphia xiv
Journal Advertisers.......... xiii
King's Puremalt.......... vii
Knoll & Co..........Digipuratum xiii
Lea & Febiger..........Publishers xix
Macullar Parker Co..........Clothing xi
Mahady, E. F. Co.......... vi
Massachusetts General Hospital.......... xix
Medical School of Maine.......... xv
Medico-Chirurgical College.......... xiv
Mellen's Food.......... xii
Natural Line Corsets.......... ix
New York Eye and Ear Infirmary.......... xv
New York Polyclinic Medical School.......... xiv
New York University.......... xv
Nurses' Directory.......... xv
Patch, E. L. Co..........Stimula ix
Pomeroy ii
Professional Cards..........xvi and xvii
Quaker Oats.......... viii
Radium Chemical Co.......... v
Saunders, W. B. Co..........Publishers i
Schering & Glatz..........Medinal v
Sharp & Dohme..........Chemists vii
Syracuse University.......... xiv
Tufts College Medical School.......... xv
Warren Chambers.......... xviii
Whiting, D. & Sons..........Milk xii

For the Physician

We want you to know the value of the drugless laxative in wafer food form. They are called Mansfield Agar Agar Wafers. Made with Agar Agar and whole wheat. So palatable that they may be eaten freely at meals.

You know the value of Agar Agar in absorbing water from the intestinal tract, moistening the feces and correcting constipation by producing a normal evacuation. The ideal way to prescribe it is in the form of these crisp, delicious food wafers.

Instead of coarse bread and fruits, suggest a few Mansfield Agar Agar Wafers with each meal. Pleasant for children—effective for the adult.

On request we will send you a box with our compliments.

Mansfield Laboratories, Inc.
Mansfield, Mass.

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

HARVARD COLLEGE LIBRARY
FEB 27 1915

THE BOSTON
Medical and Surgical
JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 8.

THURSDAY, FEBRUARY 25, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

EXPERIMENTAL USE OF MAGNETISM FOR LOCATING NEEDLES IN THE TISSUES. *By George H. Monks, M.D.,* Boston.

THE STUDY OF DISTURBANCES OF THE STOMACH. *By H. F. Hewes, M.D.,* Boston.

PLASTIC SURGERY IN PROCIDENTIA. *By Florence W. Duckering, M.D.,* Boston.

SOME OBSERVATIONS UPON DIVERTICULUM OF THE BLADDER. *By Hugh Cabot, M.D.,* Boston.

THACKERAY'S PHYSICIANS. *By Wm. Pearce Coues, M.D.,* Boston.

NEW INSTRUMENT

A WATER-TIGHT URETERAL CATHETER TIP. *By Frank H. Lahey, M.D.,* Boston.

EDITORIALS

THE LABOR CLEAN MILK BILL.

LOCAL CARE OF ADVANCED TUBERCULOSIS.

ANTI-VIVISECTION LEGISLATION.

IMMIGRATION OF THE INSANE AND MENTALLY DEFECTIVE.

LOCATION OF METALLIC SUBSTANCES IN THE TISSUES.

For complete table of contents, see first text page.

Ready-February Murphy's Clinics

This first volume of the 1915 Clinics gives you many important articles. For instance, take the one on *Carbuncle:* You get an eight-page article giving you the pathology, the differential diagnosis between carbuncle, boil and felon—a most important point because the treatment is so different—metastatic extension of the infection and the treatment to be followed in each case, depth of the incision, etc., with an instructive line-drawing in colors. In the article on *Lacerated Wound of the Thumb*—an emergency case—you get a method of saving badly lacerated fingers from amputation. Dr. Gaylord's article on *Cancer* projects into the cancer question many new ideas, particularly as regards early operation and the use of radium and x-rays, (dosage and time of administration). In the case of *Endo-aneurysmorrhaphy*—covering some 16 pages—Dr. Murphy goes very fully into the entire subject, and details the steps of endo-aneurysmorrhaphy very clearly, illustrating them with strikingly clear line-drawings.

CONDENSED CONTENTS

Clinical Talks on Surgical and General Diagnosis:
  Intestinal Fistulas.
  Fecal Fistula following late Operation for Peri-appendiceal Abscess burrowing upward behind Cecum.
  Fecal Fistula following Peritonitis, probably of Appendiceal Origin.
  Post-operative Fecal Fistula.
  Intestinal Fistula following late Operation for Appendicitis.
Carbuncle of the Arm. *Differential Diagnosis* between Carbuncle, Boil, and Felon.
Gangrenous Appendicitis—Order of symptoms in diagnosis.
Aneurysm of Brachial Artery—Endoaneurysmorrhaphy.
Ununited Birth-Fracture of Clavicle.
Contracting Cicatrices of Index Finger and Thumb.
Relation of Cancer Research to Clinical Aspects of Cancer. Radium and X-ray in Treatment (by Dr. Harvey Gaylord).
Open Reduction of Posterior Dislocation—Laminectomy.
Old Compound Fracture of Right Malar Bone resulting in loss of the External Wall of the Orbit.
Malunion of Fractured Femur with Great Angular Deformity.
Lacerated Wound of Thumb—Emergency Case.

Issued serially (six volumes a year), each volume about 200 octavo pages, illustrated. By JOHN B. MURPHY, M.D., Professor of Surgery, Northwestern University Medical School, Chicago. Per calendar year: $8.00 net; cloth, $12.00 net.

W. B. SAUNDERS COMPANY   West Washington Square, Philadelphia

Entered at the Post-office at Boston as second-class matter

The Boston Hygienic Corset Company

59 Temple Place
Telephone, Oxford 4131

Endorsed by Physicians

E. F. M.
SURGICAL CATGUT
INSURES
SAFETY FIRST
TO THE
SURGEON

SAFE STERILE STRONG SUPPLE CATGUT

PLAIN
CHROMIC
IODIZED

E. F. MAHADY COMPANY
Surgical and Hospital Supplies
671 BOYLSTON STREET, BOSTON, MASS.
Write for Prices and Samples

Current Literature

Medical Record.

January 30, 1915.

1. Starr, M. A. *Senile Paraplegia.*
2. Clark, L. P. *Further Observations on the Tic Neurosis.*
3. Bishop, L. F. *Some Recent Work in Cardio-Vascular Disease.*
4. Swanberg, H. *The Intervertebral Foramina in Man.*
5. *King, E. H. *Intestinal Paresis; Its Treatment by Means of Pituitary Extract.*
6. Langhorst, H. F. *The Streptococcus Peril.*
7. London, J. *A New Visual Lithotrite.*

5. King has had good results with pituitary extract in the treatment of post-operative intestinal paresis. Given intravenously, he says, it will empty the intestines promptly and thoroughly in the large majority of cases. It should be given in conjunction with treatment directed toward removal of the cause of the paresis. For permanent relief of pain from intestinal distention or spasm it is far more efficient than morphine. [L. D. C.]

The Journal of the American Medical Association.

February 6, 1915.

1. Macht, D. I. *The History of Opium and Some of Its Preparations and Alkaloids.*
2. *Sharpe, W., and Farrell, B. P. *A New Operative Treatment for Selected Cases of Cerebral Spastic Paralysis.*
3. Young, G. B. *Occurrence of Return Cases of Scarlet Fever and Diphtheria. Experience of Chicago Department of Health Since the Introduction of a System of Classified Quarantine.*
4. *Garbat, A. L. *Sensitized Versus Non-Sensitized Typhoid Bacteria in the Prophylaxis and Treatment of Typhoid Fever, with a Report of Seventeen Cases Treated with Sensitized Vaccine.*
5. Greeley, H. *Guides in Vaccine Therapy.*
6. *Henderson, A. C. *Diabetes Mellitus Treated with Fluid Cultures of the Lactic Acid Bacillus. Report of Four Cases.*
7. *Barnum, C. G. *The Effect of Gravitation on the Presentation and Position of the Fetus.*
8. Craige, B. *The Nursing Infant.*
9. McDonald, E. *Quinin Solution for Bladder Irrigation.*
10. Graham, C. F. *A Case of Splenomyelogenous Leukemia Treated with Benzol.*
11. Bass, R. A. *Closure of Pylorus. Case Report with Suggestion as to Technic.*
12. Wood, H. C. *Poisoning by Mercuric Chlorid, Presenting Unusual Features.*
13. Rosenbloom, J. *Report of a Case of Diabetes Mellitus Complicated by Occasional Pentosuria and Lactosuria.*
14. Gardiner, J. *Congenital Absence of Right Pectoralis Major and Minor Muscles.*
15. Frissell, L. F. *Report of a Case of Acute Poliomyelitis.*

2. These authors make the following statement in regard to their sub-temporal decompression operation for spastic paralysis: "The improvement in our cases selected for operation has been so marked—not only a loosening of spasticity, but also a definite amelioration the mental condition of the patient—that we believe a cranial decompression is indicated in those cases of spastic paralysis showing intracranial pressure by the ophthalmoscopic examination." They further state that about 40% of spastic cases show signs of increased pressure. The paper contains interesting case reports. The procedure seems of decided value.

(Continued on page iv.)

HARVARD COLLEGE LIBRARY
FEB 25 1915
CAMBRIDGE, MASS.

The Boston Medical and Surgical Journal

Table of Contents

February 25, 1915

ORIGINAL ARTICLES.

Experimental Use of Magnetism for Locating Needles in the Tissues. A Preliminary Report. *By George H. Monks, M.D.*, Boston 285
A Study of Disturbances of the Stomach. *By H. F. Hewes, M.D.*, Boston. (Continued.) 286
Plastic Surgery in Procidentia with Report of Twenty-Five Cases. *By Florence W. Duckering, M.D.*, Boston 292
Some Observations Upon Diverticulum of the Bladder. *By Hugh Cabot, M.D.*, Boston 300
Thackeray's Physicians. *By Wm. Pearce Coues, M.D.*, Boston 302

NEW INSTRUMENT.

A Water-Tight Ureteral Catheter Tip. *By Frank H. Lahey, M.D.*, Boston 303

REPORTS OF SOCIETIES.

Section of General Medicine of the College of Physicians of Philadelphia. Meeting of November 23, 1914 304

BOOK REVIEWS.

Dissection Methods and Guides. By David Gregg Metheny, M.D. 307

EDITORIALS.

The Labor Clean Milk Bill 308
Local Care of Advanced Tuberculosis 309
Anti-Vivisection Legislation 310
Immigration of the Insane and Mentally Defective 310
Location of Metallic Substances in the Tissues 311
Medical Notes 311

CORRESPONDENCE.

The Rehabilitation of the Honorable Pus-Bug. *"S."* 317
Transfusion in the Treatment of Ruptured Tubal Pregnancy. *Ernest B. Young, M.D.* 317

MISCELLANY.

Amendments in the Immigration Bill which Relate to Exclusion and Deportation of Insane and Mentally Defective Immigrants 313
Early History and Suppression of the Opium Traffic 315
Naval Surgery a Century Ago 316
Belgian Physicians' Relief Fund 319
Changes in the Medical Corps, U. S. Navy 319
Notices, Appointments, Resignations, Books and Pamphlets Received 320

Original Articles.

EXPERIMENTAL USE OF MAGNETISM FOR LOCATING NEEDLES IN THE TISSUES. A PRELIMINARY REPORT.*

By George H. Monks, M.D., Boston.

In the days before the x-rays were used for locating needles in the tissues of the body, the surgeon had often little to guide him except such information as was furnished by the history of the case. In the event that a needle, or part of a needle, was said to be in the tissues there was often not even an indication in the skin as to the position of the wound of entrance. Occasionally, to be sure, the needle could be felt through the skin, but such cases were rare. The surgeon could not even be sure, except from the statements of the patient, that the needle was still within the tissues, or that it had been there at all.

The coming of the x-rays has been a blessing in that it gives incontrovertible evidence (1) that the needle is, or is not in the tissues, and (2) that, if buried there, it is in such and such a position, and is in relation to such and such structures. In spite of all this, however, it sometimes happens that the surgeon finds the needle only after a long search, or he does not find it at all. It is quite possible that the x-ray plate has not been correctly interpreted, or that the needle has changed its position. Such being the case, it is obvious that, if any expedient can be found that will give further assistance in the search for the needle, it may at times be distinctly helpful.

More than a year ago it occurred to me that the surgeon might be aided very materially in his search for a buried needle, if magnetism could be called to his assistance, and since then I have made from time to time a number of experiments to determine if such assistance were possible. After a good deal of experimenting I came to the conclusion that, in order to enable the surgeon succesfully to employ magnetism in this way, two things are essential:—

(1) He must magnetize the needle, or the needle fragment, which is in the tissues, and

(2) He must locate this needle by means of a magnetized indicator of some kind.

After devising a number of different methods by which both of these requirements could be met, I finally reached the conviction that the simplest way was to magnetize the buried needle by means of a magnet, preferably on electro-magnet, applied as near as possible to the supposed resting place of the needle; and that the best way to find this needle after it had been magnetized was by means of a minute compass, or by the use of a highly magnetized steel needle suspended from a fine silk thread. I also used with success a very fine horse-shoe magnet made from the smallest watch-spring I could find.

I have not as yet had the opportunity of trying this method on the living subject, but, as I have used it successfully under many different conditions, I have a reasonable expectation that it will work with equal satisfaction in actual operative work. I have succeeded in magnetizing a fragment of a needle through glass, wood, felt, and various other substances, of different thicknesses up to one-half inch, and even occasionally

---

* Received for publication January 30, 1915.

more. I have also on several occasions found a needle through an incision into a piece of meat, the needle having previously been hidden in the meat by another person without my knowing its position.

The procedure is as follows:—

(1) The buried needle is magnetized by passing a magnet over the locality where this needle is supposed to be. The best results are obtained when the long axis of the magnet is in the same line as the axis of the needle.

(2) The examining needle (suspended in the middle from a fine silk thread) is then slowly passed over the same locality.

In the event that it passes over the buried needle,—provided that needle is not too far away from the surface—one end or the other of the examining needle will be attracted and will dip in the direction of the buried needle somewhat in the same manner as the "divining rod" is said to do, when that rod is brought to a place on the ground under which water can be found.

As the buried needle, after it has been magnetized, has two poles (N and S), and as the examining needle has also two poles (N and S), it follows that (according to the physical law, that "like magnetic poles repel one another; unlike poles attract one another") the N pole of the examining needle is attracted to the S pole of the buried needle, and the S pole of the examining needle is attracted to the N pole of the buried one.

At the earliest opportunity I shall make the effort, in this manner to locate a buried needle, either from the surface of the body or from a wound.

THE STUDY OF DISTURBANCES OF THE STOMACH.

BY H. F. HEWES, M.D., BOSTON.

[From the Clinic of the Massachusetts General Hospital.]

THE varieties of conditions included in the general classification of stomach trouble, untoward condition of disturbances of health or comfort in which the patient places the symptoms or most marked symptoms in the stomach, may be divided into four classes:

1. Conditions of actual organic disease of the tissues of the stomach, or anatomical deformities of the organ, or of the organs representing a direct continuation of the stomach, as the esophagus and duodenum. In this class are included ulcer of the stomach, ulcer of the duodenum, cancer of the stomach, gastritis, *i. e.* acute and chronic, atrophy of the stomach cells, actual inflammation of the mucous membrane cancer of the esophagus, diverticulum of the esophagus, gastroptosis, congenital deformities of the stomach as narrowed or imperforate pylorus in infants, constriction or pulling out of place of the organs by adhesions between the stomach and the adjacent organs, as adhesions to the gall bladder, or to the caecum, or peritoneum, and rare conditions, as sarcoma of the stomach, syphilitic disease of the stomach tissues, tuberculosis of the stomach.

2. Conditions of functional disturbance of the stomach not due to disease or disturbance elsewhere in the body, as hyperacidity pure and simple, not secondary to ulcer or gall bladder trouble, etc., hypoacidity of the stomach not due to cancer or gastritis, or disease elsewhere, hypomotility of the stomach, not due to constriction of the pylorus or malformation or adhesions.

3. Disturbances of the stomach occurring as associates of general diseased conditions, as typhoid, pneumonia, nephritis, tuberculosis, debility, nerve prostration.

4. Conditions of disturbance of the stomach function or condition, when the symptoms noted by the patient appear to be in the stomach, where the actual disease or disturbance is located elsewhere. To this class belong such conditions as the vomiting of pregnancy, the gastric crises of tabes, the manifestations of gastric symptoms, as distress in the epigatrium, raising of gas, even vomiting, seen in conditions of gall bladder trouble, appendicitis, cancer of the intestine, adhesions involving the intestine, simple constipation, conditions of acidosis, uraemia, liver trouble, mesenteric thrombosis, cases of cerebral tumor, head injury, cases of eye trouble, heart disease, angina pectoris, arteriosclerosis.

In the diagnosis of any case of stomach disturbance, or any case where the patient comes to him complaining of stomach symptoms, the physician must at the start consider in a general way the whole ground described above, in contemplating the possible causation of the stomach symptoms, or adjudged stomach symptoms, present.

The so-called stomach case may be a case of gall stones, or appendicitis, or heart trouble, or syphilis, intestinal adhesions, constipation, nerve debility, or it may be a real case of organic stomach trouble, or of functional stomach trouble.

As first aid in the diagnosis of the case, the physician has the history and record of symptoms as outined by the patient. Following this is the finding of the general physical examination, the record of auscultation, percussion, palpation, of the blood and urine examination, etc.

In addition to these two features of clinical examination utilized in the study of all cases in medicine, we have in the study of stomach troubles, or of cases with adjudged stomach symptoms, three extra special methods of examination; the examination of the stomach contents as obtained by the use of the stomach tube, the investigation of the stomach by the x-ray bismuth method, and the examination of the feces.

By the employment of this full clinical procedure, including all these methods of examination, in his cases with stomach symptoms, the physician should, in the great majority of cases, be able to reach a very definite conclusion in regard to the nature of the disease or disturbance giving rise to the symptoms in the case.

Frequently the utilization of the full method of investigation is not necessary. In many cases the result of the initial method of study, the study of the history record and findings of the general physical examination may suffice entirely for the making of a diagnosis. Thus the definite finding of appendix trouble, or cord syphilis, or angina pectoris, or nephritis, or tuberculosis, may make a special examination by the special methods of stomach investigation unnecessary, the symptoms, even though they appear to be of the stomach, being accounted for by the definite disease discovered elsewhere.

On the other hand, frequently the study of these records may suffice only to rule out certain outside conditions, and the special study of the stomach be necessary for the elucidation of the case.

So that to be equipped for work in the study of stomach cases the physician must be conversant with all these methods of examination, and with the significance of the findings revealed by them, for the interpretation of the case.

The first method of clinical study, the study of the record of the history and symptoms as described by the patient is of course of great value in connection with the diagnosis of stomach cases. Frequently we learn from this alone, if the record is carefully taken, that what appeared to be a stomach case is not that at all, that the pain, etc., described is not in the stomach but in the lower abdomen, that what the patient means by stomach trouble is constipation, or diarrhoea, and so on.

Frequently, on the other hand, this record is so typical that it tells us without further investigation that we have a disease of the stomach and the nature of the disease.

There are certain typical records found in some cases of definite stomach diseases, as ulcer or cancer, which are practically pathognomonic in themselves or nearly so.

Such are, for example, the record of the vomiting of large amounts of blood found in some cases of fresh ulcer of the stomach; the record of accumulation of contents in the stomach with final vomiting of large amounts, found in cases of ulcer or cancer involving the pylorus and causing stasis; the records of continual vomiting combined with great loss of flesh and strength seen in some cases of cancer, and the long histories of intermittent spells of the stomach symptoms of hunger pains, pyrosis, etc., found in some cases of chronic duodenal ulcer.

But in the majority of cases even of organic stomach trouble the record of the history alone is not diagnostic. Many marked cases of ulcer or cancer have a symptomology of a mild type, much less suggestive of serious trouble than many records of functional stomach trouble, or of stomach trouble secondary to outside conditions as gall stones, appendicitis, syphilis, or nerve debility.

Also these outside conditions may give a picture of stomach symptoms quite as severe in type or of the same type as those recorded above as typical symptomatologies of ulcer and cancer.

On the whole, the history of symptoms, is the least reliable of all methods of investigation for the diagnosis of disturbances with stomach symptoms. I make it a practice never to make a positive diagnosis of stomach trouble, or to advise operation, on a record of a case consisting of the history alone, save possibly in cases with a substantiated record of the vomiting of blood.

To make such a diagnosis we must have some positive clinical finding by physical examination, tube examination, x-ray examination, one or all, as a blood finding, a hypersecretion finding, a stasis finding, a gastritis finding, a tumor, or a positive x-ray picture for the diagnosis of organic stomach trouble, or the absence of abnormality in such findings to rule out organic stomach trouble.

The history record, however, though not absolutely reliable in itself, is of the greatest value taken in connection with the other clinical findings.

And much of its value depends upon the skill of the physician in obtaining from the patient a correct history record, and correct impression from this record. A record which taken in one way reads like a record of stomach trouble, may when taken correctly read as a record of constipation, or gall stones, or renal stone, or heart disease, or nerve debility.

The second method of investigation, the full physical examination, may be of great importance.

It may, in the first place, locate the seat of the disease which is causing stomach symptoms or so-called stomach symptoms, as elsewhere than in the stomach, as for example an appendicitis, or heart trouble, an anaemia, a kidney disease. Often it is necessary according to the nature of the case to supplement the routine physical examination, of inspection, palpation, percussion, urinary and blood examination, with special examination, as a Wassermann test, a test of the spinal fluid, a feces examination, a sputum examination. The meaning of stomach symptoms may appear in a very different light in a case with a positive Wassermann test than in a case without this reaction.

The third method of investigation, the examination of the gastric contents, both the fasting contents, and the test meal contents, as obtained by the use of the stomach tube, is of great value in connection with the study of stomach cases.

Frequently in cases of actual organic disease or of definite functional disease of the stomach it gives us an absolute diagnosis. Often by a negative finding it serves to rule out the existence of certain definite stomach diseases.

The routine of this examination consists of:

1. The examination of the fasting contents obtained after a twelve-hour fast.

This contents is inspected or tested as to its quantity, the presence of food residue, the presence of blood, either fresh blood or a chemical blood test, the presence of free HCl and the character of the specimen and its sediment.

2. The examination of the test meal contents, the contents obtained one hour after the ingestion of an Ewald test meal.

This contents is tested for free HCl, and, if this is present, a quantitative estimate of total free HCl is made. If free HCl is absent, an estimate of total acidity and a test for the presence of ferments may be made.

It is not necessary to make this full routine tube examination on all cases, as a part of it, the study of the fasting contents, for example, may make our diagnosis. But it is often necessary to make a full examination.

The findings by tube examination which are of most importance for diagnosis are:

1. A positive blood finding in the fasting contents, fresh blood as noted by inspection or a positive blood test by chemical method. A few shreds of blood may sometimes be obtained in a normal stomach as the result of the action of the tube, but any considerable amount of blood, or a test for blood in a contents showing no fresh blood, is always significant of the existence of some pathological condition of the stomach. It may be esophageal varices; it may be a stomach diseased as part of the disease pernicious anemia or purpura or of alcoholism; it may be ulcer or cancer, but it is always a sign of bleeding, which is pathological. There are the above rare cases of blood in the stomach besides ulcer or cancer, and there are rare cases of bleeding of unexplained cause, but in the great majority of cases where bleeding is present in the stomach it is due to ulcer or cancer or duodenal ulcer, and this blood finding by tube examination is therefore a very important fact in connection with the diagnosis of these conditions.

Certainly we can say that a record of repeated blood findings in the gastric contents is strong suggestive evidence of the presence of ulcer or cancer. The finding is of particular importance when supported by a positive blood finding in the feces.

2. A twelve-hour stasis finding in the fasting contents, a large amount of contents containing food, obtained 12 hours after the ingestion of a meal.

This is pathological and means obstruction of the pylorus by cancer or ulcer, or, rarely, by some other cause as adhesions or tumor outside pressing upon and obstructing the gut.

We may get lesser degrees of hypomotility in functional conditions and rarely in conditions of extreme debility from any disease, intestinal paralysis from peritonitis, total loss of function in moribund conditions in any disease, the phenomenon of a twelve-hour stasis may occur. But otherwise it almost invariably means a cancer or ulcer of the stomach and is a very positive diagnostic finding.

Conditions of less degree of retardation or stomach emptying doubtless occur in atonic stomachs from other causes, ptosis with dilatation, for example. Often we may get a six-hour bismuth stasis in other conditions, but a twelve-hour food stasis means, as stated, organic disease of the stomach.

As between cancer and ulcer as a cause of stasis, other factors of the examination, as the presence of blood, the presence of free HCl, may help discriminate. Stasis simply means one of the two, with the exceptions noted, and the other factors with the history and x-ray examination may help us to determine which.

3. The finding of a fasting contents showing hypersecretion, that is, an abnormal quantity of contents—50 to 100 c. c.—consisting of pure fluid containing free HCl, but no food residue. The quantity of fasting contents in the normal may run as high as 30 c. c. We may get abnormally large amounts of contents in gastric stasis or chronic gastritis, or in hypersecretion. Stasis contents show food, gastritis contents show mucus or a marked cellular sediment. Hypersecretion is simpy a large amount of contents of normal character with no food, and not a mucous content like gastritis.

Hypersecretion may be a sign of simple functional hyperacidity of the stomach, a well recognized stomach malady, or it may be an associate of ulcer of the stomach or duodenum or of adhesions to the stomach or duodenum. It is, therefore, simply a sign of an abnormal stomach malady, suggestive, taken with other findings, of ulcer, but often meaning simply a functional hyperacidity.

As a rule a high percentage of free HCl in the test meal contents is associated with it.

4. A finding of a mucous contents or a contents containing many stomach cells in mucus.

This phenomenon is characteristic of the disease chronic gastritis. Chronic gastritis may be an associate of cancer or it may occur by itself. It is common in alcoholism and cirrhosis.

5. A finding of an abnormal cellular sediment in the fasting contents.

This finding is often made in cases of cancer or ulcer. It is, of course, also made in chronic gastritis.

It is not diagnostic but often suggestive with other signs. Normally the sediment of the fasting contents may contain a few cells or many leucocytes—but it does not contain numerous stomach cells (cylindrical epithelial cells). This latter finding is often present with cancer of the curvature, sometimes with chronic ulcer of the wall.

6. The presence of free HCl in the fasting contents is the rule, but absence of free HCl is not a sign of abnormality, as absence of free HCl in a test meal contents would be. A very high percentage of free HCl is often found in hypersecretion and ulcer cases.

The findings of importance in the test meal contents are as follows:

1. The presence of free HCl.

Normally free HCl is always present in a contents obtained one hour after an Ewald test meal. Absence of free HCl means an abnormal condition. This may be an associate of cancer or chronic gastritis, but it may exist as a purely functional condition. Absence of free HCl is important in connection with a diagnosis of cancer taken with other findings suggestive of cancer, as stasis or a blood finding or a tumor. But alone it has no special significance in this way. Presence of free HCL in a test meal contents is often found with cancer and almost always found with ulcer.

2. The quantitative estimate of free HCl.

In the normal after a test meal the amount of free HCl varies. Its maximum normal is about 0.145%. Amounts above this figure mean hyperacidity. This is found in the condition known as functional hyperchlorhydria. It is found as an associate of ulcer.

3. The tests for ferments may be of importance in determining the existence of the diseases achylia gastrica or atrophy of the stomach. Here we get no free HCl and no ferments. In the average case of hypoacidity the ferments are present.

Tube examination is an indispensable adjunct of the study of conditions of stomach disease. The evidence obtained by this method when of positive character is much more definite as to diagnosis than the evidence obtained by the record of symptoms.

Negative evidence by tube examination does not rule out the existence of organic stomach or duodenal disease. Thus conditions of chronic duodenal ulcer often exist with a normal tube finding. Cancer or ulcer of the stomach may have a normal finding, often a finding which, though abnormal, is not definitely diagnostic of these conditions.

But positive evidence by this method is often absolutely diagnostic and never, like apparently good evidence, supplied by a history record or an x-ray examination, misleading in a positive direction.

The fourth method of examination, the study of the stomach by the x-ray bismuth method, is of great value for the diagnosis of disease of the stomach.

It is particularly useful for the diagnosis of cancer of the stomach or ulcer of the stomach and duodenum. Thus Carmen states that 93% of ventricular cancers under his examination were recognized by x-ray examination, that is, an x-ray finding suggestive of cancer was found in this percentage of cases of cancer.

In 7% of the cases of cancer the condition was not recognized.

In ulcer of the stomach, 65% of the cases were recognized by x-ray, the remaining 35% not giving definite signs.

In duodenal ulcer 135 cases out of 190 were clearly recognized by x-ray examination.

The methods of study by x-ray bismuth are two in number, the fluoroscopic method and the radiographic method. In any given case either method may give equally definite finding, but of the two the fluoroscopic method is in my experience the more useful.

Evidence of the existence of ulcer or cancer of the stomach or duodenum by x-ray examination appears in three ways:

1. As an abnormality in the outline of the shadow of the stomach and duodenum.

2. As an abnormality in the peristalsis over a portion of the wall of the organs or of the peristalsis of the stomach generally, independently of the site of the lesion.

3. In certain cases, as, for example, those in which the lesion causes some obstruction or interference with the regular expulsion of stomach contents, a third sign may appear, namely, an abnormality in the discharge of bismuth from the stomach or duodenum, showing sometimes, as a stasis of bismuth in these organs for a longer period than normal, sometimes as a more rapid initial emptying of the stomach than normal.

In conditions of chronic ulcer involving the stomach wall in any location above the pylorus, not obstructing this opening, we find in well-marked cases, an absence of peristalsis over a portion of the stomach wall where the lesion is located. Peristalsis comes down to this point, is checked here, skips this portion, or is irregular here, and goes on below it.

In well-marked cases where, for example, the ulcer is a penetrating ulcer or where much contraction of the wall from scar tissue is present, we find also an irregularity in the outline of the stomach corresponding to this area of disturbed peristalsis. Sometimes a crater filled with bismuth can be seen at this point. Sometimes the shadow appears as a diverticulum, a deep invagination or projection of the wall, with sometimes a shadow of bismuth outside the outline of the stomach. In some cases we get an hourglass shadow evidencing contraction of the wall by ulcer.

In addition to this check in peristalsis or irregularity in outline at the seat of the ulcer, the whole stomach often shows in these cases, a general abnormality in peristalsis, consisting of a very deep and vigorous peristalsis most marked above the seat of the lesion, but extending over the whole stomach.

Often on the wall opposite the seat of the ulcer a marked spasm is seen, a tendency to tonic contraction at the point, known as an incisura.

In a case of ulcer of the stomach wall above the pylorus all of the above phenomena, *i. e.* local disturbance of peristalsis in a limited area, local irregularity in outline, generally increased peristalsis, incisura opposite the ulcer, may be present.

In other cases some one or two of the signs only may be present, as for example, simply an area of checked peristalsis, or simply an incisura in a portion of the wall suggesting the presence of an ulcer on the opposite wall.

In the cases with many signs or marked signs of abnormality, as, for example, cases with a crater or a diverticulum, or a marked irregularity in outline in a portion of the wall, we consider that we have fairly definite signs of an ulcer, or of an organic lesion, either ulcer or cancer.

It must be emphasized, however, that even such emphatic pictures can be caused by other conditions, as, for example, a condition of adhesions attached to the stomach wall, adhesions from the gall bladder, or peritoneal surface of the abdomen. Adhesions may cause an actual irregularity in the outline of the stomach wall. Often they cause irregularity in peristalsis over a portion of the wall, or general abnormality of peristalsis.

In the cases of the finding of so-called moderate signs of disturbance as, for example, cases showing simply an incisura as an abnormal sign, we feel that the finding may be evidence of an ulcer, but that it is not definitely diagnostic of this lesion, as other causes, adhesions, or reflex spasm from gall bladder trouble, from cord syphilis, or from simple nerve causes, may give this finding.

Ulcer of the stomach wall not at the pylorus may also cause some disturbance in the emptying of the stomach, showing in the presence of stasis of bismuth in the stomach for an abnormal period, a six-hour bismuth stasis, for example, but this finding, though important in connection with other abnormal findings, is not in itself a very definite sign of ulcer. Ulcers of the antrum do often cause pylorospasm as an abnormality. Sometimes, also, there may be as a result of the excessive general peristalsis associated with the ulcer, an abnormally active initial emptying of the stomach.

Ulcer of the stomach wall may be present without showing any abnormal signs by x-ray examination, and, as stated, not infrequently ulcer though showing some abnormality does not show definite enough signs to allow of absolute diagnosis as a result of study of this method. Fresh bleeding ulcers often show no definite signs, also superficial chronic ulcers. Penetrating ulcers, or ulcers causing much contraction of tissue, as a rule show very definite signs of abnormality.

To summarize then, though we cannot always diagnose ulcer of the stomach wall by this method, even where ulcer exists, and may even find no signs of abnormality in such cases, we can say that the method gives us a means of determining the presence of ulcer in many cases. A negative finding cannot be taken as absolute evidence of the absence of ulcer.

Ulcer of the stomach involving the pylorus gives in practically all cases definite signs of abnormality by x-ray examination. This picture differs in many features from that given by ulcer of the wall in location other than at the pylorus, just described. Here we find:

1. Absence or irregularity of the sphincter.
2. Abnormally deep and vigorous peristalsis of the stomach.
3. Sometimes irregularity of outline in pyloric regon.
4. Retention of bismuth in the stomach for a longer period than normal, a nine-hour residue, a twelve-hour residue, a twenty-four-hour residue, according to the amount of obstruction caused by the lesion.

Often no bismuth can be seen entering the duodenum and no duodenal cap is made out. It must be borne in mind, however, that similar findings may be present from other causes, as, for example, cancer of the pylorus, adhesions involving the pylorus or duodenum. Cancer as a rule, does not show the vigorous peristalsis of the stomach seen in ulcer, but it may do so. Otherwise the signs are often the same. Adhesions may give the whole picture as described for ulcer.

The findings by bismuth x-ray examination of duodenal ulcer are as follows:

Ulcer of the duodenum involving the pylorus, or causing obstruction of the pylorus, shows the same signs as ulcer of the stomach involving the pylorus just described.

Ulcer of the duodenal wall located below the pylorus, but not causing actual narrowing of the opening shows, as a rule

1. Irregularity of the duodenal cap.
2. Extra deep and vigorous peristalsis of the stomach.
3. Some retardation in the emptying of the stomach, *i.e.* a six-hour bismuth stasis. Often this is the whole picture of this condition.

In some cases an actual irregularity in the shadow of a portion of the duodenal wall is seen in addition to the general irregularity of the cap —sometimes a crater or diverticulum with bismuth outside the shadow of the duodenum. Sometimes the bismuth appears to remain there and not pass on normally. Sometimes there is marked pylorospasm. Often in duodenal ulcer there is initial hyperactive emptying of the bismuth from the stomach due to the extra stomach peristalsis associated with this condition. Often with duodenal ulcer both below the pylorus or involving the pylorus, the pylorus of the stomach is further to the right than normal.

Duodenal ulcer well below the pylorus may exist without any abnormal signs by x-ray or without signs which are definitely diagnostic of this lesion. Fresh bleeding ulcer may show no signs; chronic ulcer as a rule shows signs which are at least suggestive.

Adhesions involving the duodenum may give a picture exactly similar in all respects to that considered typical of duodenal ulcer.

Some of the signs, as pylorospasm, a six-hour residue, abnormality in peristalsis, may occur in gall bladder trouble, appendicitis, or in tumors in the abdomen outside of the stomach.

Cancer of the stomach wall located above the pylorus shows by x-ray examination:

1. A portion of the stomach wall where peristalsis is absent or irregular.
2. An actual irregularity in the shadow of the wall, that is, a finding similar in many ways to those found in chronic ulcer of the wall.

In many cases the irregular shadow is of such a character that it is fairly typical of cancer, as distinguished from ulcer. This is, however, not always the case.

The peristalsis of the stomach generally outside of the region affected is as a rule sluggish. In this way the picture of cancer differs from the usual picture seen in ulcer where the peristalsis is apt to be extra vigorous. However, in both cancer and ulcer general peristalsis may be normal. Sometimes in cancer we see actual craters filled with bismuth.

Cancer involving the pylorus shows:

1. Absence or irregularity of the sphincter.
2. Abnormally long retention of bismuth in the stomach, according to the extent of obstruction.
3. Marked irregularity of outline of the stomach shadow at the location of the lesion.
4. Peristalsis of the stomach above is apt to be sluggish as contrasted with that seen in ulcer of the pylorus, but this distinction is not universal. If obstruction is marked no duodenal cap is seen.

The distinctions in the pictures of cancer and ulcer of the stomach both of the curvature and of the pylorus are very clear in some cases, but in others not definite. Where cancer is at all extensive, the irregular shadow is of a very different type than that of ulcer. As stated, peristalsis of the stomach is apt to be more sluggish in cancer.

With cancer at the pylorus the closure is often less absolute and the spasm seen in ulcer lacking.

The findings by x-ray examination seen in connection with the condition of adhesions involving the stomach and duodenum have been to a certain extent described in connection with the description of the findings in ulcer.

As stated, adhesions involving the stomach wall may give absolutely the picture considered typical of ulcer or cancer, viz. an area of absent peristalsis, often an irregularity of outline. Incisura may be present. General peristalsis may also be abnormal, showing sometimes increased peristalsis, occasionally sluggish peristalsis. Sometimes the stomach is definitely drawn out of position.

Adhesions involving the duodenum may give every sign of duodenal ulcer, absence or irregularity of the cap, increased and deep peristalsis above, a six-hour bismuth stasis, sometimes absence of sphincter, and a nine-hour stasis.

The exact value of the x-ray method of investigation of the stomach, as a means of diagnosis of stomach disease, cannot at the present time be accurately estimated. This fact can be determined only after a study of a large number of cases in which a record of x-ray examination and of the actual disease present as revealed by operation, or postmortem, or other definite findings, are obtained. The method has at present been under use too short a time to give sufficient data for a final judgment as to its accuracy throughout the whole field of the diagnosis of stomach disease. We can, however, from present knowledge, reach some very definite conclusion in regard to its value for this work.

The x-ray bismuth method of examination is useful for the diagnosis of the following diseases of the stomach and duodenum: ulcer, cancer and adhesions involving the organs. It is also useful for the determination of the size and position of the stomach.

In some cases the x-ray finding is of so definite a type that a diagnosis of the disease, as ulcer or cancer, can be made with assurance from this finding alone. This is true in cases where the lesion is at the pylorus.

In other cases the finding is definite enough for a diagnosis of the existence of one of the three organic stomach lesions described: cancer, or ulcer, or adhesions, but not pathognomonic enough, taken alone, to distinguish which of the three is present.

In the majority of cases in which the x-ray examination gives suggestive evidence of the existence of one of these conditions, however, the finding cannot, even if of a fairly definite type, taken alone, be considered as absolute evidence for the diagnosis of any one of these three separate conditions.

Either we have evidence perhaps fairly diagnostic of the existence of some organic trouble, that is one of the three conditions, but not distinguishing which, or findings which while suggestive of the existence of one of the conditions, are of a type which may be found in conditions other than organic stomach disease.

I have seen conditions of exactly similar findings in cases of cancer and ulcer. I have seen adhesions involving the stomach or duodenum give the exact finding seen in marked cases of ulcer and considered as typical x-ray finding of ulcer. I have seen cancer diagnosed where adhesions were the only pathological finding.

And most of all, I have seen findings similar to those found in proven cases of cancer and of ulcer marked findings considered typical of these conditions, where no organic lesion of the stomach was present, as proven by operation and opening of the stomach.

I have seen sometimes a whole typical picture of, and often some of the signs of, organic stomach disease, as incisura, pylorospasm, a six-hour residue, in gallstone cases, appendix cases, syphilis of the stomach, syphilis of the cord.

The method is of very great value in connection with the diagnosis of the existence of the stomach conditions, but as a rule positive diagnosis of the existence of such conditions should never be made by x-ray examination alone, unconfirmed by other clinical findings, as tube findings, or feces findings, or at least by a very typical history.

This is a point which has been emphasized to most of us by costly experiences. Abnormal x-ray findings, while perhaps more constantly positive, in conditions of ulcer and cancer, that is, more universally present in the whole run of cases, than other clinical findings, as tube findings or feces findings, have the one deleterious feature, that they may be present, where no organic stomach lesion exists. Tube findings, for example, may show no definite abnormality in many cases of gastric ulcer, where x-ray findings give positive evidence, but the former never give definite, so-called diagnostic findings, where no lesion exists.

I call particular attention to this misleading quality of the x-ray method because it is a habit today among many physicians and surgeons to utilize x-ray examination to the exclusion of the more thorough method of investigation, and to abide too much by the x-ray finding or its interpretation in diagnosis.

The value of x-ray examination as a means of excluding by negative findings the presence of organic lesion, cannot be absolutely determined, since we have no way of judging at present exactly how many cases of cancer or ulcer we overlook.

We do know, however, that both cancer and ulcer may be entirely overlooked by the method. This is particularly the case with fresh bleeding ulcers, diagnosis proven by haematemesis, or tube findings, or stool examination, or by later operation, and is undoubtedly true of early stages of cancer. I have seen cases of ulcer showing blood by tube, or blood by feces, later operated upon and found, with negative x-ray findings upon repeated trials. And I have seen cases with symptoms showing a negative finding, return within a year and show a positive finding of cancer both by x-ray and operation findings.

I do, however, take a good deal of satisfaction in the use of the method for probable exclusion of cancer or ulcer in certain cases, as, for example, cases with tube findings of chronic gastritis associated with hypochlorhydria where it is important to determine whether the gastritis finding is an associate of cancer or not, or cases with hypersecretion and hyperchlorhydria where it is important to determine whether we are dealing with simple hypersecretion or hypersecretion associated with ulcer.

Negative x-ray findings are not absolutely exclusive in such cases, but they are reassuring.

The use of the x-ray method of investigation in the study of stomach cases is not, of course, necessary in all cases, since a positive diagnosis is often made as a result of the study of the other routine methods of examination without resort to this ordinarily more expensive method of investigation. It is necessary in all cases where the findings by the other methods indicate or strongly suggest the presence of some serious pathological process, without giving evidence for positive diagnosis of the condition.

How far we should go in the employment of the x-ray method of study in the investigation of these cases with stomach symptoms not showing any definite evidence of the existence of disease elsewhere, as gall stones, appendix, etc., as a cause of symptoms, and not showing a definite abnormality in the tube finding for diagnosis of stomach disease, is a point which cannot be settled by any general rule. We should like an x-ray examination in all such cases, partly because x-ray examination does in many cases give definite evidence of a pathological process where other methods of examination fail to do so, and partly because, though absence of x-ray findings does not absolutely rule out the presence of cancer or ulcer, it gives us one more argument for excluding these conditions. But under present circumstances we cannot have the desideratum.

(To be continued.)

PLASTIC SURGERY IN PROCIDENTIA, WITH REPORT OF TWENTY-FIVE CASES.*

By Florence W. Duckering, M.D., F.A.C.S., Boston.

Attending Surgeon, New England Hospital for Women and Children, Roxbury, Mass.; Attending Physician, Pope Dispensary.

As we get some degree of prolapsus in practically all lacerated and over-stretched cases which come to us for repair, we will leave the first degree out of this paper, and consider only the cases of complete or incomplete procidentia, where there is an extrusion of cervix or fundus from the vulvo-vaginal opening with, or without, eversion of the vaginal walls.

Four of my cases occurred in single women with a nulliparous cervix and a stretched, rather than a lacerated, condition of the vaginal outlet. I am thoroughly convinced after a careful study of this subject, that the shape and length of the cervix is the most important factor in the great majority of cases, and that this is often accounted for by heredity. Nowhere in the literature can I find the statement that this condition runs in families, which apparently is principally due to the length and shape of the cervix, and contributed to, no doubt, by slender ligaments and perineal muscles.

---

* Read before the New England Hospital Medical Society, Nov. 19, 1914.

I have in mind two sisters, both nulliparae, one of them being unmarried, who came to me with a complete procidentia and marked eversion of the vagina. The unmarried sister had a fibroid, which added weight and pressure, and after an abdominal hysterectomy, where the cervix was removed by special request, there was an eversion of the entire vagina, probably partly owing to the fact that I did not fasten the vaginal wall to the round ligaments at the time of the first operation for hysterectomy, and after six months the prolapse recurred suddenly during a fit of coughing. I did a plastic operation, which up to this time is entirely satisfactory. Both these cases were long past the menopause; the second sister, being too old and frail for operation, is able to wear a pessary.

In another of my cases there is a history of a patient's mother and sister having the same trouble, and in still another the patient's mother has "falling of the womb" and two sisters have some trouble. In married women, most of my cases gave a history of normal labors. Several had only one child, and it seemed in their case a cause of one-child sterility, due probably to the posterior position of the uterus. In almost all the cases the uterine canal was longer than normal, often no doubt brought about by increased weight and subsequent stretching and elongation of the supra-vaginal cervix, but many of them, I am firmly convinced, were congenital. We all know that certain mental and physical characteristics may be transmitted by heredity. Why not, then, the shape and strength of the pelvic viscera? The shape of the bony pelvis also varies in patients and its relation to the abdominal axis, causing a vast difference in intra-abdominal pressure. The uterus is a freely movable body, and its relation to the vaginal canal varies, being chiefly regulated by the length and strength of its attachments, especially the anterior, round, and utero-sacral ligaments. Short posterior ligaments predispose to retro-positions, and are an important factor in procidentia. A short anterior lip, in many cases due to a low implantation of the anterior vaginal wall, is apt to maintain its axis in the pelvis by an anteflexion. Retrocession may complicate either condition, and gradual descent from intra-abdominal pressure will follow, if it comes on the upper, intead of the posterior, surface of the fundus. Increased weight of the uterus, as in sub-involution or tumors, tends to stretch and weaken the round and broad ligaments, and permit descent. Increased intra-abdominal pressure, from whatever cause, is an important factor, especially if the relation of the axis of the uterus to the pelvis has been changed, so that the pressure is exerted in the direction of the outlet. This varies to a limited degree by a full bladder or rectum, and is aggravated by straining, coughing, and lifting; indeed, the latter are often given in the history as active causes. Overstretching from repeated pregnancies with lacerations of the birth canal is one of the most common causes of procidentia, though the patient may have no discomfort or knowledge of the fact for years, frequently not until after the menopause. We often see severe lacerations of the cervix and perineum with cystocele and rectocele, but if the uterus is in the right axis to the pelvis and vagina, there is at most only a slight degree of prolapse. A generally poor physical condition with a loss of tone and elasticity of muscles is an important predisposing cause of any prolapse, especially if long continued and aided by gravity, and is an important factor in these cases. A fall or strain at this time may cause a sudden stretching of the ligaments, with insufficient elasticity for rebound and replacement, especially if we have a wedge-like cervix with favorable conditions for its rapid elongation, even if not already present by heredity or other causes. You will notice that one of my series occurred in an unmarried woman past the menopause, after a carriage accident. In none of my cases was there a complete tear of the perineum or loss of sphincteric control of the anus. A great majority of them, however, have been constipated, complaining of a lack of expelling force, especially where the abdominal muscles had been overstretched as well.

These patients are usually most uncomfortable, though few of them have severe pain unless they suffer from accompanying hemorrhoids. They complain of a sensation of weight and dragging; many of them have cystitis varying in severity, often due to a pocketing of the bladder, with decomposition of a residual urine; sometimes they are infected with the colon bacillus.

In washing out the bladders of these cases, it is not unusual to catheterize them, and find the argyrol left in the day before. The older patients have usually tried all kinds of pessaries; many of them have had previous repair operations. Their general condition is apt to be poor, and they feel depressed, weak, and discouraged. They often have backache, and sometimes headache and dizziness. Many of them have systolic murmurs, which seem to be due to lack of muscular tone, and may clear up later with rest and tonic treatment. Some of them are fat and bulky; exercise makes them more uncomfortable and they take as little of it as possible. There may be high blood pressure and arteriosclerosis.

Diagnosis. Locally we may find a complete or incomplete extrusion of the uterus, according to the length of the cervix, the degree of laceration or stretching of the vaginal walls and perineum, and the size of the fundus. If there is much descent, there may be incontinence of urine or leucorrheal discharge, and we are apt to find erosions or friction sores on the cervix. If the vagina is everted it is usually dry, corrugated, and hard. If partially everted the moist areas may be ulcerated. If there is a large cystocele there is almost certain to be an accompanying cystitis, and it is well to obtain a catheterized specimen of urine. The passage of the catheter may give useful information regarding the presence of stone, pus, or blood, and the direction and length of the urethra. I hear that one of my cases died a year after the plastic operation, from an operation for abscess of the left kidney, and several of them *still* complain of bladder trouble. Fibroids or malignant tumors should be looked for in all cases, both in the fundus, or protruding from the cervix or vulva. In fibroid polypi the question is settled by finding the os externus. Vaginal tumors or a cyst may be present in the incomplete cases, or may exist alone.

Treatment. If aged or tired and depressed, especially if there is any heart lesion, I try to give these patients absolute rest in bed for a few days with a bland nourishing diet, plenty of water, and antiseptic diuretics if necessary. The bowels are thoroughly and regularly moved with cathartics, and if cystitis is present, a daily irrigation of boric acid, or weak permanganate solution if the colon bacillus is present. I then leave about an ounce of a ten per cent. solution of argyrol in the bladder. In all my cases but the first, I used preliminary scopolamine and morphine anesthesia. Either one, one and a half, or two doses, according to the age and blood pressure of the patient, and the judgment of the anesthetist. After the patient has been moved to the operating room she is disturbed, and a little ether may be necessary to begin with, especially if the cervix is to be dilated. I make a routine practice of this, and either use the curette or apply tincture of iodin to the canal, or both. In one patient of sixty-two I found a very tight internal os. Dilatation was followed by a discharge of pus, but as the patient was under the anesthetic I determined to proceed. The result was a moderate infection of the perineum, which rapidly cleared up under treatment, and in no wise affected the result; so I explore every uterine cavity, and always disinfect it with iodin. In cases of low implantation of the anterior vaginal wall one has to be careful not to cut into the bladder; I have seen it as low as the edge of the anterior cervical lip; less care is needed posteriorly. I usually make a circular incision and peel both walls back to the desired length by measurement. Once or twice I have gone through into the peritoneal cavity in a complete case, with no untoward result. I usually tie the lower uterine vessels except in women in the child-bearing period. I then remove the denuded cervix, being careful to retain the distal edges with an instrument, otherwise the fundus may disappear from your sight and cause some difficulty and delay in the operation. The vaginal edges are now sewn to the cervical edges with three stitches anteriorly and posteriorly, making a new os. The lateral edges are approximated to each other, being careful not to leave any raw surface, as vaginal adhesions are very liable to form in these cases. I use ordinary chromicized catgut, and leave the middle ends long enough to hold the anterior wall firmly during the operation for cystocele. In my first cases I used the oval denudation, later the triangular, often with some return of the cystocele with both methods. It was in a dissatisfied frame of mind that I went to Chicago and saw Dr. Bertha Van Hoozen do a central flap operation, which she thought was contra-indicated by trachelorrhaphy, but which I have not found to be the case. A straight incision is made in the median line of the cystocele, both flaps are turned back to a pillar of the deep perineal fascia, shown by a white line pointed out by her. The two fascial lines are brought together by interrupted catgut sutures, pushing up the bladder as they are tied, treating it as a hernia. The mucous membrane is now dissected back as far as convenient for easy coaptation, and sewn over the first line of sutures with a continuous catgut stitch. The next consideration is the posterior wall, which often forms a large rectocele. I usually do the Emmet M-shaped denudation, but carry the two angles up as high as possible and attach them to the deep perineal fascia at the sides of the vagina, forming very long arms to the Y when finished. The perineal muscles are brought together and sewn with interrupted stitches of 40-day chromicized catgut. It is essential that these stitches hold for at least two, better three or four, weeks. I seldom remove anything but a few irritating knots during convalescence. Catgut does not cut the skin like silkworm gut. The after-care is easier, is less painful, and does not require removal, a process which is often painful and a source of dread to the patient. If the general condition permits, I remove any hemorrhoids present, but this combination greatly increases the suffering, and it is not my custom to do it unless it is absolutely necessary, especially in the aged.

After-care. I use an ice bag for the first forty-eight hours, with hamamelis or dry gauze on the stitches. Great care is required with regard to the regulation of the bowels and bladder, and irrigation for cleanliness. Where there has been a cystitis I continue my treatment by irrigation and injection into the bladder of a ten per cent. solution of argyrol, with some antiseptic diuretic by mouth. Usually catheterization is necessary. The bladder should be emptied every six or seven hours, oftener if the patient complains of pain. There may be incontinence of urine from the overflow of a full bladder, or the patient may squeeze out a few drops from spasm, so in any case use a catheter if there is pain or distention. I have never used a permanent catheter in these cases; it is almost sure to cause an irritation in cystitis in my experience. In two or three of my cases I excised hemorrhoids, and noticed a decided increase of urinary symptoms from this source of nervous irritation and pain. The bowels should be moved in forty-eight hours. I usually give an oil enema just before defecation for the first few days. If there are hemorrhoids, I sometimes mix the oil with lime water, if not, plain or with soapsuds. After peristalsis is well established I find cascara is apt to give painful spasms of the anus, and prefer a milder cathartic. The salines give watery movements and make it harder to keep the perineum clean. Constipation, or a low enema for rapid expulsion, may tear the perineum apart and is to be avoided, especially in the second week when the stitches begin to dissolve. I find that the stronger antiseptics irritate and apparently decrease the vitality of the already depleted tissues, so use nothing stronger than sterile water or boracic acid solution. If the stitches irritate, argyrol gives relief. In some severe cases, a sloughing of parts of the posterior wall or perineum may take place, especially if the stitches have been tied too tightly, or there has been much post-operative edema. If the strong forty-day catgut has been used this has not been serious in my cases, and with care, the after-effect has been quite satisfactory; indeed, one of the best results I have seen was in a case of this kind. After the sloughs came out the tissues closed down into a solid muscular perineum. This patient had a large rectocele the size of a fetal head, and the tissues were thin and much depleted. You must, however, make sure that your fascia holds. I regard the fascial attachment as important as the muscular, there is less strain on it and no elasticity except in the vaginal walls, which give to strain and relax very easily. I formerly kept these patients in bed twenty days. Now I judge according to the case and the age of the patient; at least two weeks is necessary, sometimes three, and if there is any sloughing it may require four. In elderly patients a second operation is often a very serious matter, and no care or pains should be too much for surgeon or nurse. These women are usually veterans of the child-bearing period who have done their duty to state and country, and I feel it a privilege to do my part toward their comfort and restoration to health. They demand our best care in every case; eternal vigilance is their due. Tonics are usually needed during convalescence. The digestion is generally impaired, and careful feeding is sometimes necessary, especially with regard to the gas-producing foods, as starches and sugars. I have seen serious symptoms in one or two of my cases from the pressure of gas on a fatty heart in a stout and bulky patient. As soon as the patient is up, it is advisable for her to wear some abdominal support, either a belt or front laced corset, as they prefer or the case demands. If not too aged or bulky I find the corset holds up the intestines and decreases the intra-abdominal pressure if worn correctly, having in mind the ptosis which often exists in these cases. In this way it improves the digestion and general health; but if the patient is stout or old, or has never worn corsets, it is a source of irritation to them, and a good fitting belt is better, though not to be worn tightly. In hospital work social service is very valuable, to see that proper hygienic care is given, or followed out. Many of them have a return of cystitis, which could have been prevented or stopped in the early stages. There may be a gradual extension of the infection through the ureters to the kidneys, as in one of my cases. These patients get constipated in spite of all your advice, and by constant straining may bring about more or less return of their original trouble, especially if bloated, or any other cause of increased intra-abdominal pressure exists. When aged their intellect is often not as keen as it used to be, and they need intelligent supervision.

Case 1. Mrs. L., 69 Widow, American. Operation in May, 1908. This was a case of complete procidentia with erosion of cervix. She was unable to wear a pessary and complained of feeling tired all the time, with numbness of thighs and general lameness. Frequent micturition. Mother of eight children. Widow two years. Menopause twenty years before. After four days' rest in bed with preliminary treatment the operation was performed under ether anesthesia. The internal os was closed, and a gush of pus followed the introduction of the uterine sound. The canal was dilated and disinfected with tincture of iodin. It measured four inches. I removed two inches of the cervix, tying the lower uterine vessels. Oval denudation for large cystocele. Y-shaped colpo-perineorrhaphy. Convalescence interrupted by inflammation of perineal wound, which, however, did not break down and she was discharged in good condition at the end of four weeks. I saw this patient twice, at the end of the first and second years following the operation. She is in good condition, feels well, and perfectly comfortable; she is now 75 years old.

Case 2. Miss F., 29. Born in N. B. I first saw this patient in April, 1909. She was complaining of attacks of nausea and vomiting, with epigastric pain referred from right side. There was tenderness and rigidity over MacBurney's point. The cervix was long and snout shaped, and protruded from the vulva about half an inch. The uterus was retro-cessed, but easily replacable. She refused operation, so a pessary was fitted and she was referred to another physician for medical treatment. In August of the same year she had an acute attack of appendicitis and was sent to the hospital. After the acute stage had passed the appendix was removed and the uterus suspended with kangaroo tendon by another surgeon. I did not see the patient again for six months, when she returned with the following history: She had felt better till the past two or three weeks when she developed a cold and cough and now felt as uncomfortable as before the operation. Examination showed an extrusion of the cervix worse than before. The uterus was in the axis of the vagina and there was a separation of the recti muscles. A pessary was worn without much comfort for a year, the patient in the meantime trying to do house work. In June, 1911, the condition getting worse, she consented to further operation. The uterine canal measured four and a half inches. After a thorough dilatation and curettage one and a half inches of the cervix was removed. The abdomen was then opened through the scar, at the same time dissecting it out. No traces of the former suspension were found, and the round, anterior, and broad, ligaments were much relaxed. A Gilliam suspension was done, taking care not to wound the fundus, and the abdomen closed in layers. This girl looked strong and healthy and yet her musculature was very poor; it required much searching to find the two very slender recti muscles. Her convalescense was uninterrupted and she left the hospital in good condition in about three weeks. I hear from her occasionally. She is well and working hard.

Case 3. Mrs. G., 42, married. Born in Austria. Has had four children and two miscarriages, the last one eighteen months ago. Operated on two years ago for prolapse, with irregular and profuse menstruation. She refused hysterectomy at that time and plastic work was done. Three months later the prolapse recurred and the patient felt no better. I operated on her in September, 1910. Nothing was done to the cervix. An oval denudation was done for the cystocele, followed by a high colpo-perineorrhaphy. Whether flat, or Y-shaped, is not given in the records, and no attachment to the fascia is mentioned. I hear from this patient that she is not well. She has trouble in holding her water and something comes down. She also has some discharge.

Case 4. Mrs. W., a widow of 60. Operation in September, 1910. Has had five children. The first instrumental, the third craniotomy, no miscarriages. Menopause at 45. History of heavy lifting followed by prolapse two months ago. The cervix was lacerated. Length of canal not given. The cervix was amputated and an oval denudation was done for the cystocele followed by a flap perineorrhaphy. I have heard nothing from this patient.

Case 5. Miss N., 68. Born in America. Menopause at 50. Operation in March, 1912. First noticed a dragging sensation fifteen months before. Has worn a pessary for the past year. Examination showed a cocoanut-sized tumor, attached to the fundus and freely movable. Cervix long and eroded. Complete procidentia. I did a total hysterectomy, the cervix being removed by request. Convalescence was uninterrupted and the patient was comfortable for about four months when she developed a cough and cold. Suddenly after a fit of coughing the whole vagina came through the outlet in complete eversion. A pessary proved useless and the patient was again operated upon. An oval denudation was made anteriorly and the edges brought together, posteriorly an M-shaped denudation was done, carrying the arms up to the old scar, the middle tongue of vaginal tissue being attached to the deep perineal fascia on both sides. The slender perineal muscles were dissected out and sewn tightly together with interrupted 40-day catgut, leaving an opening sufficient for drainage and irrigation. She was discharged in three weeks in good condition and is perfectly comfortable since the last operation two and a half years ago.

Case 6. Mrs. M., 42, married. Born in Prince Edward Island. Sent to the hospital for procidentia. Length of uterine canal not given. High amputation of cervix, oval anterior colporrhaphy, and high Y-shaped perineorrhaphy, attaching the sides to the deep perineal fascia. Discharged in four weeks in good condition. This patient writes that she has some difficulty in holding her water and is suffering from piles.

Case 7. Mrs. L., 62, married. Born in America. History of one child, no miscarriages. Feels tired, weak and depressed, trace of albumen in the urine; accentuation of second aortic, heart otherwise normal. Examination showed a complete procidentia, with a sharply retroflexed uterus, and long eroded cervix. Operation in May, 1912. Dilatation shows tight contractile internal os with a pus-like discharge; canal four and a quarter inches, disinfected with iodin. A circular incision was made round the cervix, the vaginal walls were dissected up to the peritoneal attachment above the flexion, the lower uterine vessels were tied and the denuded cervix removed. An oval denudation of the cystocele was followed by a long Y-shaped colpo-perineorrhaphy with attachment of fascia. I also removed two hemorrhoids by dissection and continuous suture. This patient had a long and slow convalescence owing to her depressed and nervous condition, but was discharged in good condition at the end of four or five weeks. She had a severe fall the next year, but tells me she is well and perfectly comfortable during the day. She gets up once or twice at night to empty the bladder.

Case 8. Mrs. S., 53, married. Portuguese. Mother of ten children. Comes for complete procidentia. Operation in June, 1912. Length of uterine canal not given, nor date of menopause. High amputation of cervix, oval anterior colporrhaphy, and long Y-shaped colpo-perineorrhaphy. Discharged in good condition in twenty-two days. This patient's daughter writes to tell me that her mother was perfectly comfortable after the first operation, but that she died two years later following an operation for abscess of the left kidney. Kelly of Baltimore speaks of the great frequency of kidney complications in these cases due to an ascending infection from the cystitis, this, however, is the only one of my cases where I have known it to occur.

Case 9. Mrs. S., 65, widow. History of one child, no miscarriages. Had a previous plastic operation one year ago. I found a senile uterus with much scar tissue from the previous operation especially on the perineum. A large triangular denudation was made on the anterior wall and sewn with continuous catgut. A long Y-shaped colpo-perineorrhaphy followed, extending the arms of the Y up to the cervical junction, and attaching both sides to the fasica. Discharged in three weeks in good condition. I hear from this patient that she feels well and nothing comes down, but that she has some trouble in holding her water and is often up several times at night.

Case 10. Miss N., 32. Born in N. B. Came to see me complaining of backache, bearing-down pain, dysmenorrhoea, and irregular menstruation. Examination showed a prolapse of about two inches of cervix during expulsive efforts; prolapse had been noticed by her for over a year. I operated in February, 1913. The uterine canal measured practically five inches, more than half of which was due to a hypertrophied cervix. I removed two inches of the cervix, after a thorough curettage for endometritis, and made an application of iodin; the uterus was packed anteriorly until the next day, in case of vomiting or straining. Nothing was done to the vaginal walls or perineum. She was discharged in three weeks after a slightly painful menstruation. When I saw this patient a year later she had been practically free from dysmenorrhoea, her periods were regular with less amount, the uterus was anterior, and she had been perfectly comfortable except once after heavy lifting, when there was a sense of weight and fullness for a few days. The ligaments seemed quite able to hold the lighter uterus in good position, though the vaginal walls were somewhat relaxed.

Case 11. Mrs. G., 40, married. Born in England. Mother of seven children, no miscarriages. History of irregular menstruation for two years. Her general condition was poor, she was stout and bulky, and had a systolic murmur. She was very uncomfortable and often unable to walk. Examination showed a large uterus but no fibroids. Operation in May, 1913. Length of canal not given; much tissue removed by the curette, showing a hyperplastic endometritis. I removed one and a half inches of the cervix, and did an oval denudation of the anterior wall for cystocele, followed by a high Y-shaped colpo-perineorrhaphy. She was discharged three weeks later in good condition. Now she writes to tell me she doesn't feel very well, as she is two or three months pregnant, is constipated, and suffering from incontinence of urine.

Case 12. Mrs. C., 43, married. Born in N. S. Has had two children, both labors normal. One miscarriage. Comes for irregular and profuse menstruation, prolapse noticed for six months, painful the last two weeks. Has leucorrhea. Operation in March, 1913. Uterine canal four inches. Considerable tissue removed with curette and canal disinfected with iodin. One and a half inches of cervix removed, nothing done to the anterior wall, Y-shaped colpo-perineorrhaphy. Discharged in three weeks in good condition. I have heard nothing of her since.

Case 13. Mrs. H., 45, married. Mother of seven children, all normal labors. Two miscarriages, last one six years ago. Operation in March, 1913. Canal four inches. One and a half inches removed, after a curettage and disinfection with iodin. Y-shaped perineorrhaphy. Nothing was done to the anterior vaginal wall, as there was no marked cystocele. She was discharged in twenty-six days in good condition. This patient writes to tell me she is constipated, and the bladder comes down, though she has no difficulty in holding or passing her water.

Case 14. Mrs. K., 63, widow. Born in N. B. Mother of six children, last one twenty-four years ago; all normal labors. No miscarriages. Has noticed falling of the womb for two years. Examination showed a complete procidentia with an eroded cervix. The uterine canal measured three and three-quarter inches, fifteen years after the menopause. I removed one and a half inches of eroded cervix, tying off the lower branches of the uterine vessels. I used a triangular shaped denudation on the anterior vaginal wall, and a high Y-shaped perineorrhaphy, attaching the fascia on either side. The patient was discharged after five weeks, according to the records, in fair condition, but she writes to tell me she feels perfectly well, is doing general housework, has no trouble with urination, no discharge and no prolapse. She has, however, a slight lack of sphincteric control of the anus. She is a most happy and appreciative patient, according to her letter.

Case 15. Mrs. J., 48, married. Born in Sweden. Operation in April, 1913. History of two previous plastic operations nine and one years ago at another hospital. Has had two children, the first an instrumental delivery. Irregular menstruation past two years. Uterine canal measures four inches, cervix small and hard to dilate. Much scar tissue from previous operations. One and a half inches of cervix were removed, the uterus pushed well anterior, and a high Y-shaped colpo-perineorrhaphy done, after dissection of scar tissue. Discharged in twenty-six days, condition recorded as fairly good. I saw this woman a few days ago. The uterus was high in the pelvis and very small; there was no cystocele, but an egg-sized rectocele, starting high above the fascial attachments. A small movable body, apparently a cyst, seems to have prevented the proper healing of the perineal muscles and is still present under the perineal scar. She suffers no discomfort, but is persuaded to try again.

Case 16. Mrs. J., 60, widow. Menopause seventeen years ago. Has had two children, both normal labors, but torn with the first one, 39 years before. No miscarriages. Has noticed "falling of the womb" for about ten years. Examination shows complete procidentia. General condition poor. Feels weak and tired, and is suffering much pain from hemorrhoids. Has an irregular pulse, and a systolic murmur. After five days' rest in bed with preliminary treatment, the patient was operated upon in April, 1912. The uterine canal measured three and a half inches seventeen years after the menopause, and yet the uterus felt small. I removed the cervix up to the peritoneal attachment, did a triangular anterior colporrhaphy, and a long Y-shaped colpo-perineorrhaphy; I also removed the hemorrhoids at the request of her physician. She was discharged in twenty-four days in good condition, and looked well six weeks later. I hear she continues well, is active, and has perfect comfort. The systolic murmur has disappeared and the pulse has become regular.

Case 17. Mrs. F., 40, married. American. Menopause three years ago. Has had two children, youngest three, both normal labors. No miscarriages. History of lifting something heavy two and a half years ago; later a bunch appeared at the vulva with pain in the left side and backache. Stout heavy woman with systolic murmur and accentuated second sound of the heart. Operation in April, 1913. Procidentia almost complete. Canal three and a half inches. Cervix amputated; Y-shaped perineorrhaphy with removal of much scar tissue, also excision of hemorrhoids. Discharged in twenty days in good condition, and I have heard nothing further from her since.

Case 18. Mrs. C., widow of 71. Born in N. S. Came to the hospital with complete procidentia and eroded cervix. Menopause 31 years ago. She was tired and felt weak, had arteriosclerosis, high blood pressure, and varicose veins of lower limbs. After rest and treatment she was operated upon in April, 1914. Uterine canal measured three and a quarter inches, thirty-one years after the menopause. One and a half to two inches of the cervix were removed, tying the lower branches of the uterine vessels. Straight flap anterior colporrhaphy, high Y-shaped colpo-perineorrhaphy. Discharged in twenty-five days, result not given in the records. She writes to tell me, however, that she feels better than for many years, nothing comes down, she has no trouble with the bladder, but is very constipated.

Case 19. Mrs. L., 55, widow. Mother of five children, all normal deliveries, though the first was slow and hard. Menopause four years ago. Procidentia past six months. Is now complete. Length of canal not given, but after amputation of the cervix it measured one and three-quarters inches. Operation in April, 1914. Cervix amputated, straight flap operation for cystocele, high Y-shaped colpo-perineorrhaphy. Discharged in twenty-six days in good condition. Patient writes that she is very constipated, and has some trouble in holding her water, but that nothing comes down. She has no discharge, and feels well if she does not overwork.

Case 20. Mrs. P., 48, married. Born in America. Comes for procidentia, noticed the past year. One child nineteen years old, normal labor. Menstruation irregular for a year. Cervix cystic. Uterine canal three and a half inches. Much tissue removed with curette, showing hyperplastic endometritis. One and a half inches of cervix removed, straight flap operation for cystocele, high Y-shaped colpo-perineorrhaphy. Discharged in twenty-three days in good condition. I hear from this patient that she has felt fine since she recovered from the immediate effects of the operation in April, 1914, and that she has more comfort in standing and walking than for years. She has no trouble with the bladder, no leucorrhea, and is menstruating regularly.

Case 21. Mrs. L., 58. widow. Born in Russia. Mother of eight children, all normal labors. Two miscarriages, one after last child seventeen years ago. Menopause three years ago. Is short and stout, with a pendulous abdomen. Feels tired all the time, with a dragging sensation of the pelvis, and backache. She also has sciatica. Has noticed prolapse for over a year; bladder trouble on and off for ten years, worse the past three years. Frequent and painful micturition. Examination showed a complete procidentia with eroded cervix. Has been unable to wear a pessary. I did a high amputation of the cervix on this case, tying the lower uterine vessels. A straight flap anterior colporrhaphy was done, and a high Y-shaped colpo-perineorrhaphy, with attachment to the deep fascia. She developed an acute attack of cystitis after the operation, but quickly recovered under treatment, and was discharged in twenty-three days in good condition. I saw this patient a week or two ago, when she had a slight attack of cystitis, but the mechanical cure was complete. The catheter passed through a straight urethra, there is a good perineum, and no bulging of the vaginal walls.

Case 22. Mrs. F., 59, married. Born in America. Has had nine children, all normal labors; torn twenty-two years ago with fourth child. Two miscarriages. Comes for "falling of the womb," worse since an attack of bronchitis two years ago. Examination showed complete procidentia, a rectocele the size of a small fetal head, and a moderate sized cystocele. Stout and bulky, with pendulous abdomen. Heart irregular and intermittent; high blood pressure. Complains of feeling weak and tired, with a dragging sensation in the pelvis. Operation in June, 1914. Canal three inches. Many scars holding the uterus, so only about one inch amputated from the cervix, at the same time repairing old lacerations in the vaginal wall. Oval denudation of small cystocele with continuous catgut suture. Large rectocele denuded, puckered, and incorporated into the fascia at the sides of the vagina. High Y-shaped perineorrhaphy. Discharged from the hospital in six and a half weeks. Convalescence interrupted by sloughing of small areas in perineum and posterior vaginal wall, but owing to the 40-day catgut sutures, the muscles and fascia held well, and the end result was good. She also had an acute attack of cystitis after the operation in spite of preliminary treatment. The bladder was capacious and pocketed, argyrol injected one day was often passed in the catheter the following day. I saw this patient about three weeks ago, and she is perfectly comfortable, quite active about her house, and the mechanical result is very good. She has recovered from her sciatica and the cystitis. These patients are a long time in the dorsal position on the operating table, and if there is an old sciatica or lame back, it is quite liable to start up a fresh attack.

Case 23. Miss C., 50. American. Menopause six years before, after a carriage accident. Has no pain, but a feeling of weight and discomfort in the pelvis. Has noticed prolapse the past six months, with incontinence of urine. No family history of malignancy. Examination showed a complete procidentia. Cervical lips eroded and much thickened, with a small polypus presented at the external os. I did a high amputation of the cervix, opening slightly into the peritoneal cavity. Length of canal three and a half inches, two inches of which were removed. The uterus was pushed anteriorly, and a long posterior colporrhaphy done, extending to the vaginal vault. The overstretched and slender perineal muscles were brought tightly together, and sewn with interrupted 40-day chromicized catgut. Convalescence was uninterrupted, and she was discharged in twenty-two days in good condition. I hear from her occasionally, and she continues well and comfortable.

Case 24. Mrs. F., 45, married. Born in Ireland. Has had three children, first and last being instrumental deliveries. No miscarriages. Complains of a feeling of weight and dragging in the pelvis, present three years since the birth of her last child, and gradually getting worse. Has dizzy spells. Examination showed procidentia not quite complete, with a fibrous growth on the posterior cervical lip about the size of a walnut. Canal three and a half inches. Amputation of one inch, after a thorough curettage. Anterior colporrhaphy by a straight flap method, perineorrhaphy by the flap method. Discharged in three weeks in good condition. I have not heard from this patient since she left the hospital two months ago.

Case 25. Mrs. F., widow. Born in Ireland. Has had two children, first labor instrumental. Menopause fifteen years ago. Sensation of weight and dragging in the pelvis for the past six months. Operation in September, 1914. Complete procidentia past two months. Canal three and a half inches. One inch amputation, anterior colporrhaphy by straight flap method, high Y-shaped colpo-perineorrhaphy. Discharged in twenty-seven days well healed.

Here we have 25 cases to consider which extend over a period of six years. It is noticeable that most of the patients give a history of normal labors, and the one absolute failure was in a case that had been operated on before and the cervix was not amputated either time. I maintain that the removal of the cervical wedge is a very important part of the operation, and I generally find the length of the canal almost double the normal, even in a senile uterus which feels small. We also have to consider the deep perineal fascia which extends from the pubes to the perineal body and ischial spines, with openings for the urethra and vagina. I make use of this fascia in my vaginal work and regard it almost as important as the perineal muscles; where they are atrophied or slender, even more so. I have only used the straight flap method on the anterior wall during the past year. Though it does not stop the cystitis I have not as yet seen any return of the cystocele, and the urethra has been straight in every case to the passage of the catheter. With regard to the bladder symptoms, there has been some return of incontinence in 6 cases, 14 have no further trouble, and 5 have not been heard from. There has been a slight return of cystitis in 2 cases, and 2 have a cystocele which annoys them, though at the time of operation it did not appear necessary to do an anterior colporrhaphy. In one of the cases of incontinence the patient is pregnant, and does not say how she was before she became so. In three cases there is a return of the cystocele after the oval and triangular methods of denudation, and there is some return of the cystocele in two cases where there is no incontinence.

Cystocele of itself then does not necessarily cause incontinence; it is due to lack of sphincteric control. If you pass the dilators into the urethra of these cases you will find them so relaxed that they admit the largest size with slight, if any, resistance, and yet during convalescence they may suffer from retention. After they go home and are more on their feet, the difficulty in holding the water returns, though in none of the cases has there been complete incontinence afterward. I prefer this method to abdominal fixation or suspension, as in my experience the latter does not cure, unless combined with plastic work. In the aged with a very small fundus, the after-effects are not always comfortable after suspension, due to a dragging on the new anterior ligament, which eventually stretches under intra-abdominal pressure and relaxed outlet, and permits renewed descent. The combined operation is long, and the risk much greater in these patients of lowered vitality, both from sepsis and shock. The few vaginal hysterectomies I have done have not been a cure, unless accompanied by plastic work, even with a vaginal attachment to the round ligaments, and the shock was much greater to the patient. I fail to see any advantage in this, over the high amputation, where eight ligaments have a small piece of fundus to retain, compared to the round and broad ligament attachment to the vaginal walls after hysterectomy, unless there is a question of malignancy or tumor.

Contra-indications. Contra-indications are serious heart and kidney lesions, glycosuria, malignant disease, fibroids, and diseased adnexa. In the patient of child-bearing age, there is no contra-indication if you leave the internal os intact, and allow for involution. I have carefully followed four cases and personally delivered two, where the labor was quick and easy for the first time. One of my patients had borne two previous children with slow hard labors, and the other had given birth to one. Both of them, however, needed extra care afterwards, owing to the tendency to retroversion. I do not tie the lower uterine vessels in these patients, which makes a difference in involution. In the cases of pseudo prolapsus it is not usually necessary to operate on the vaginal walls or perineum if the patient is young, comes to operation in time, and there is no marked retroversion. There must of necessity be a retrocession in these cases, due to the overstretching of the anterior ligaments on account of weight, plus the wedge. If it seems necessary, a retroversion pessary may be worn by the patient for a few months until the tone of the tissue is restored; it will then be found that the ligaments can well take care of the lighter uterus. At first there is involution, followed by a slight broadening of the uterine body. In one of my cases in a young married woman I left a three-inch canal, and three months later the measurement was two and a half inches, so I allow at least half an inch for involution and broadening; more if there is an accompanying endometritis, as the involution will be greater.

Do not in any way decrease the blood supply to the uterus in these cases; they usually need more development. The main thing to guard against is retroversion. When once established, it is often impossible for the patient to wear a pessary to advantage, and some kind of suspension may become necessary. After childbirth the same care is required in all amputated cervices; be on your guard against the increased tendency to retroversion. It has been necessary in two of my cases for the patient to wear a support for the increased weight of the uterus during the first three or four months of pregnancy, until it is well out of the pelvis, on account of the dragging on the already weakened supports of the bladder. In these women there is less question of postoperative shock, but they are often stout, with fat abdominal walls, and a suspension is not always necessary if skilful plastic work is done. The recovery is quicker and there is more subsequent comfort. In some cases a suspension may become a fixation with future trouble for the obstetrician and danger for the patient. Last, but often not least, is the personal dread of some patients to the scar, and they positively refuse anything abdominal on this account.

SOME OBSERVATIONS UPON DIVERTICULUM OF THE BLADDER.*

BY DR. HUGH CABOT, M.D., BOSTON,

Assistant Professor of Genito-Urinary Surgery, Harvard Medical School; Chief of Genito-Urinary Department, Massachusetts General Hospital.

THE subject of diverticulum of the bladder, has, on the whole, attracted less attention, until very recent times, than its importance would justify. Of course, little or nothing was known of these conditions until the routine use of the cystoscope led to their discovery, before such time as they produced recognizable symptoms. There can be no doubt they are a factor of extreme importance because, though they may occasionally exist throughout life without producing important damage to the urinary apparatus, this is the result not at all to be expected, and they are capable of producing an amount of damage which leads to the death of the individual.

Different Types of So-called Diverticula. Some confusion has arisen through failure to separate the different types of pouches or diverticula which are found in the urinary bladder. Thus the small hernial protrusions between the muscular fibres which occur in the subjects of chronic urethral obstruction bear no relation to true diverticula. They are simply the result of weakness of the bladder-wall when put under strain; are directly due to the obstruction and lose their importance when that obstruction is removed. The pouch connecting with the vertex of the bladder, due to failure of closure of the urachus, should also be distinguished from the type of diverticula of which I wish to speak here, since it is in and of itself a perfectly definite failure of development, occupies a constant position and is comparatively unimportant in the surgery of the bladder. The word "diverticulum" should, I think, be confined to those cases of pouches, always of congenital origin, occurring most frequently in certain positions but occasionally seen in almost any portion of the bladder and not due to defective development or lack of closure of any recognized structure. I cannot agree with the view expressed by Chute in a recent paper, that they originate in the little pouches normally seen just above the ureteric orifice, and that they become important only when this pouch is exaggerated as the result of obstructive pressure. My reason for disagreeing lies in the fact that they are so frequently found in individuals in whom obstruction is totally absent, in whom in fact the symptoms of obstruction are due, not to any obstruction, but to the diverticulum. I incline to the view that when found in individuals with urinary obstruction, they are an accidental finding and of no etiological significance. That they are due to some embryonic defect is clear, but I have as yet seen no adequate explanation of their formation beyond the fact that they are associated with peculiarities of the closure of the cloaca, perhaps with a tendency to budding from this structure. It is to be hoped that some of our embryological brethren will produce an adequate explanation.

Congenital Diverticula. These diverticula are covered by the normal coats of the bladder, though the contractility of their muscular fibres is at times certainly defective. The position of election seems to be in the immediate neighborhood of the ureteral openings, and it is to this fact that they owe their greatest potentiality for harm. They are also seen on other portions of the base of the bladder, on the sides and even near the vertex, but those occurring on the upper segment of the bladder can do less damage and are, therefore, less important.

Effects upon the Urinary Apparatus. These effects are largely from two sources: First, those arising from pressure upon the ureter; and second, those arising from the inability of the diverticulum to empty itself completely, and therefore its great liability to infection. The importance of diverticula in the production of hydronephrosis has not, I think, been sufficiently emphasized. The frequency with which they occur in relation to the ureter and the tendency of the ureter orifices to lie in the diverticulum or to be drawn into it, at once puts the integrity of the kidney upon that side in jeopardy. The distention of the diverticulum will always put abnormal pressure upon the ureter, and should that structure follow the lower border of the diverticulum (as is not infrequently the case) a valve-like arrangement results which will in time largely or completely obstruct the ureter. I present herewith a specimen of double diverticulum in which this condition has gone on to such an extent as to produce the death of the individual. The history is as follows:

---

* Read before the American Association of Genito-Urinary Surgeons, in 1912.

Case 1. March, 1911. H. J. G., 38, wagon maker. Measles and inflammatory rheumatism 20 years ago. Thirteen years ago attack of inflammation of bladder lasting three days, with frequent and painful micturition. Three years ago passed blood following a blow on his side. Eighteen months ago had bloody urine followed by retention after fall on perineum. Habitually constipated. Several attacks amounting to obstipation. Four years ago began to pass large quantities of urine, 14 to 16 pints. Three years ago sugar was found and has been present since. Now passes three to four pints at a time. Comes in for pain in R.L.Q. and in splenic flexure. Fairly developed, thin nervous man. Examination negative except for bladder distended to umbilicus. No sugar found. Bladder drained by catheter, small quantity at a time. Hemorrhagic cystitis resulted. Is most uncomfortable when bladder is distended half way to umbilicus. Remained in hospital one month. Temperature usually normal. Pulse average 96. Towards end of this time patient began to vomit and grow weaker. Bladder was kept empty and urine rarely below 40 ounces a day. He died, with symptoms of uremia.

Pathological Report. Kidneys moderately enlarged and boggy. Renal tissue much thinned. Dilated pelves contain a large amount of rather thin purulent fluid. Ureters much dilated. Right circumference 5cm. Left 6 cm. Bladder wall thickened and trabeculated. In region of opening of right ureter is a diverticulum 4 cm. in diameter, which when distended presses on ureter. In region of left ureter is opening of large diverticulum about 10 cm. in diameter. Opening admits little finger. Opening into left diverticulum is left ureter. Distention of diverticulum occludes left ureter.

Diagnosis. Diverticula of bladder. Cystitis. Pyonephrosis. Broncho-pneumonia, right lung. Obsolete T.B. upper lobe, right lung. Emphysema of lungs. Sero-fibrinous pleuritis, right. Gangrene of tissues of right thorax following saline infusion. Anemia.

In a recent case, a diverticulum of considerable size lay just above the left ureter, which followed its lower margin and opened just at its orifice. In this case distention of the diverticulum produced a valve-like obstruction of the ureter, which was much dilated and thickened. It was very apparent that had this condition been allowed to continue, extensive damage to or destruction of the kidney on that side would have occurred. The history of this case is appended.

Case 2. May, 1912. M. G., 30, factory. Family and past history negative. For past six months patient has had pain in bladder region with burning micturition. For past two months has occasionally passed blood. Sometimes pain in back. Working or eating heartily seems to make pain worse. O.P.D. record: Bact. report March 26, 1912. Slight growth bacilli. Apr. 6, pig found dead. Too early for diagnosis of T.B. Cystoscopy, J. D. B. Residual, 11 ounces. Bladder irritable. Mucosa red and edematous. Ureters functionating. Jet from right(?) cloudy. Cystoscopy, J. D. B. Residual, 11 ounces. Directly in front of cystoscope to left of mid-line, round opening of congenital diverticulum, with m.m. puckered around opening. Catheter with fuse wire inserted into diverticulum. X-ray shows diverticulum.

Physical Examination. Negative. Cystoscopy, Dr. Cabot. O.P.D. Large amount residual. Bladder washes clean without difficulty. Four hundred and fifty c.c. distention. In about position of left ureteral orifice, opening of large diverticulum. Ureter not seen. Cystoscope can be made to enter diverticulum.

Operation. Dr. Cabot. Amph. Ether. Dorsal. Trendelenberg. Bladder washed and distended with boric. Median suprapubic incision. Bladder opened and diverticulum explored with finger. Peritoneum opened and left ureter dissected free and suspended with tape. Peritoneum stripped off bladder. Intestines walled back. With finger in diverticulum this structure was dissected free. No peridiverticular inflammation. Diverticulum opened. Ureteral orifice not seen so ureter opened about three inches from bladder and probe passed through it to bladder. Ureteral orifice located in bladder proper about one-half inch from neck of diverticulum. Diverticulum about size of orange extended downward toward prostate, carrying before it the left ureter. When diverticulum was distended it pressed upon bladder orifice of ureter, tending to close it. Ureter was distinctly hypertrophied and dilated to size of large lead pencil. Diverticulum communicated with bladder by opening which would admit two fingers and appeared to be covered with extensions of all coats of bladder. It was removed at its junction with the bladder and aperture closed with c.g., the mucosa and muscular layer being closed separately. Opening in ureter closed with fine c.g. Sponge count correct. Peritoneal cavity closed. Original opening in bladder closed in two layers. Two large pieces of rubber tissue between peritoneum and bladder. Wound closed to wicks with c.g. and s.w.g. Catheter through urethra.

Excision of diverticulum of bladder. Patient doing well but troubled somewhat by a rather diffuse bronchitis with some pleurisy. Very slight leakage of urine from suprapubic wound due to blocking of catheter. No leakage. Catheter out. Voids O.K. No residual obtained. Wound clean and granulating; strapped. Patient has developed marked phlebitis of whole of left leg. No. T.R. and P. Phlebitis much better. Wound appears solid. Very small granulating area. When dressing was changed today, nearly one ounce of necrotic material came from opening about one-eighth inch in diameter, in site of drainage wick. Opening gently dilated and sinus found to extend for nearly three inches along line of drainage wick. No reaction whatever. Wound again practically dry today.

June, 1913. Came to hospital at request. Scar firm. No urinary symptoms.

April, 1914. Writes in reply to letter that he is perfectly well.

Effects arising from the inability of the diverticulum to empty itself completely and therefore its great liability to infection.

It is not clear whether these diverticula are in their early stages capable of emptying themselves and are, therefore, harmless or whether they are more or less continually the site of residual urine. In the cases that have come under observation, the ability completely to empty themselves has, as a rule, been lost and it is frequently for this reason that they require medical care. Nothing except some other condition requiring close scrutiny of the bladder would otherwise lead to their discovery. It must be clear that if urine remains in them more or less continually, they are exposed to the same probability of infection as the obstructed bladder. We all of us, I think, believe that urinary retention is one of the commonest, if not the commonest cause of cystitis, and inflammation of a diverticulum must follow substantially the same course. Many of the cases which we have seen have attracted attention because of evidences of urinary infection. Further examination showed that residual urine was present, frequently at an age when obstructing lesions of the prostate do not occur, and the investigation thus started led to their discovery.

The following case is more or less typical of this class:—

Case 3. October, 1909. L.L., 28, furniture business. Two years ago had an acute urethritis, which was very persistent, involving the prostate and has left him with a cloudy urine. Has been efficiently treated but cloudy urine still remains, though it causes no symptoms.

Seen in August, 1909, with Dr. M. E. P. Fitzgerald. Both vesicles found distended and prostate rather irregular, which was thought to account for his condition. In September seen again and found to have a persistent residual of about five ounces. Operation suggested. An attempt to pass cystoscope in the office was unsuccessful. Condition believed to be one of contracture of the neck of the bladder.

Operation. October 30. Ether. Under an anesthetic, cystoscope passed with some difficulty and shows the opening of a diverticulum on the right lateral wall of the bladder, which will undoubtedly account for cloudy urine. A suprapubic extra-peritoneal cystotomy was done. Orifice of diverticulum found to admit the finger and the sac lay on the right lateral and inferior wall of the bladder. The peritoneum was then stripped off from the right and posterior bladder walls. Peritoneum torn a little at the point of attachment to the urachus. The diverticulum, which had previously been packed with gauze, was readily found at its upper border, and the opening proved to be practically at its highest point. The neck of the diverticulum was divided extraperitoneally and the bladder wall at this point closed with interrupted catgut sutures. The sac thus isolated from the bladder was then freed by blunt dissection and removed. At its lower border it was in contact with the rectum and upper part of the prostate. The ureter, though not seen, was found by passing a ureter catheter to lie upon its lower and outer walls and was not damaged. Bladder wound closed snugly around a medium rubber drainage tube with a Gibson stitch. Abdominal wall closed in layers above and below tube. Protective tissue drain to the right lateral wall of the bladder.

November 2. Drainage has been entirely satisfactory. No leakage around tube until today, when it was removed.

November 7. There has been very little leakage from wound, which is now practically tight. Urine passed freely. There is apparently a little residual urine. Seen in January, 1911. Urine normal. No residual. No symptoms.

THACKERAY'S PHYSICIANS.

By Wm. Pearce Coues, M.D., Boston.

Not the least skilful and clever portrayals of character of the great Victorian novelist pertain to medical men.

Though not the heroes of any of Thackeray's works, physicians have an important place in a few and are mentioned in more than a cursory way in a number of his novels.

Thackeray knew his medicine and medical men of the period well, and all his writings concerning physicians have that inimitable touch, which seems to say, no matter what the subject, "I am master of it." This undoubtedly arises from his attention to detail, and passion for accuracy of description. If he had not known of physicians, he could not have written of them as he did. Of that we may be assured.

In "The Adventures of Philip," a physician is perhaps, next to the hero, the most important character—George Brand Firmin, arch type of the unscrupulous, though clever, society doctor. In his description of this character, Thackeray does not spare the profession, and we know that such types did exist. The portrayal of all the different artifices and subterfuges of this unhappy man is a wonderful example of Thackeray's genius. We have a pen picture of Dr. Firmin as follows:—

"Dr. Firmin's manners were so good, his forehead was so high, his frill so fresh, his hands so white and thin that for some considerable time we ingenuously admired him." We have a picture of him at his club at dinner, choosing a table near a nobleman of vast fortune, though it is draughty and cold. Goodenough, the honest, gruff antithesis of Firmin, cannot conceal his contempt as he watches the other, while he "daintily poured out creaming wine from the ice pail by his side."

At Philip's bar dinner, his father is "called out" by an urgent case, as, Philip groaningly says, always happens. A note is silently presented by the butler, and Dr. Firmin gravely excuses himself—a visit he cannot put off, a friend of high nobility,—he must go.

The elder Firmin meets the fate he well deserves—an execution in his house—he flees to New York, where he draws on his son every now and then, to the latter's chagrin.

In Pendennis we also have Dr. Goodenough, Firmin's antithesis, whose devotion to Pen and skilful care in his illness are graphically described.

Also appears the young surgeon, Huxter, fresh from "Bart's," with dubious hands, writing home of "an interesting case of compound fracture"; the latter is our friend Costigan, with barked shins, the result of too much *spiritus frumenti,* often the case with poor "Cos."

The elder Huxter, the old physician of Clavering, Pen's town, where Fair Oaks is situated, would be much put out at young Huxter's marriage with Pen's former flame, little Fannie Bolton, the porteress' daughter, so Lady Rockminster is persuaded to allow him to prescribe for her, and after he has prescribed Spir. ammon, aromat. and Spir. menth. pip. for his august patient, the news is broken to him, and the bitter bolus rendered more palatable by his artful friend Pen, reinforced by Laura Bell, his fiancée.

The immortal Pen's own father was an apothecary and physician, of somewhat humble origin. He started practice in Bath, but was unsuccesful there until Lady Ribstone's drunken chairman cast her through his door, breaking one of Pen's best pink bottles. Pendennis took such good care of her that from that time on his future was assured in Bath and he was a great favorite.

In "Men's Wives" Thackeray gives us a vivid description of Dennis Hagerty, the raw-boned young regimental surgeon who falls an easy victim to the charms of a third-rate boarding house belle. After the consummation of his marriage, nothing will do but that Dennis should resign his commission in the army and return to Ireland with his bride, to New Molloyville, where his old friend, the supposed narrator of the story, comes across him with a numerous progeny. In the meantime, his wife has become afflicted with smallpox and loses her vision, which has tended to make her shrewish temper all the worse. The picture of poor Dennis trying to be cheerful and welcome his guest to his cottage, is indeed a sad and pathetic one. Luckily for him, the virago suddenly leaves him, though Dennis feels the blow bitterly and is constant to the last.

As Dickens is known to have taken Smollett for his master, so Thackeray, to a great extent, took Fielding for his, but we have many touches in his works reminding us of Smollett also. Undoubtedly, Roderick Random suggested Dickens's David Copperfield, and there are reminders in Pendennis and other of Thackeray's works of many instances in "Ferdinand, Count Fathom," and other of Smollett's works. In short, as his great predecessors did, Thackeray used his wonderful powers of analysis of the manners and customs of men, particularly with a view to holding up the sham and the tinsel, and physicians received their share of criticism from his trenchant pen. But this was always tempered with charity and the severe ridicule of physicians, such as is noticeable in Smollett's "Humphry Clinker" and "Ferdinand, Count Fathom" is absent, or at least mitigated to such an extent that it leaves no bitterness. What more touching tribute to the profession can be imagined than Thackeray's lines in Pendennis: "It is not only for the sick man, it is for the sick man's friends that the doctor comes. His presence is often as good for them as for the patient, and they long for him yet more eagerly. How we have all watched for him! What an emotion the thrill of his carriage wheels in the street and at length at the door has made us feel! How we hang upon his words and what comfort we get from a smile or two, if he can vouchsafe that sunshine to lighten our darkness! Who hasn't seen the mother prying into his face to know if there is any hope for the sick infant that cannot speak and that lies yonder with its little frame battling with fever? Ah, how she looks into his eyes! What thanks if there is light there,—what grief and pain if he cast them down and does not say 'hope.' Or it is the house father who is stricken. The terrified wife looks on while the physician feels his patient's wrist, smothering her agonies, as the children have been called upon to stay their plays and their talk. Over the patient in the fever, the wife expectant, the children unconscious, the Doctor stands as if he were Fate, the dispenser of life and death. He *must* let the patient off this time. The woman prays so for his respite. One can fancy how awful the responsibility must be to a conscientious man; how cruel the thought that he has given the wrong remedy, or that it might have been possible to do better! How harassing the sympathy with the survivors if the case is unfortunate—how immense the delight of victory!"

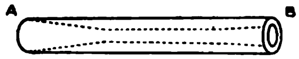
New Instrument.

A WATER-TIGHT URETERAL CATHETER TIP.

By Frank H. Lahey, M.D., Boston.

After using the ureteral catheter tip as shown in the illustration below, I have given up the old perforated rubber nipples, as supplied by most of the dealers in cystoscopes, because it has been my experience that after a little use they allow of leakage, and even when new that with a strong contraction of the bladder there is often a leakage around them.

The tip as shown in this illustration is made by Eynard of Paris, and was intended not as a ureteral catheter connection for the cystoscope, but as a connection to be used between a syringe and ureteral catheter, so that injections might be made with a syringe not having a tip fine enough to enter the small opening in a ureteral catheter.



As is shown in the figure, it consists of a hollow rubber tube about 16 F. in size, the canal in one end, A, widening out for about one-third of its extent and more abruptly at its end B. The caliber of this tube, as supplied to me by Mr. Charles Bard, Eynard's American representative, is of sufficient size to fit snugly around a 4, 5 or 6 ureteral catheter. So snugly do they fit that it is impossible to introduce the catheter through it unless it is greased with a little sterile vaseline or some other oily lubricant. If this is done, even a No. 6 catheter may be introduced without difficulty.

The end A, with the longer taper to its canal, is slipped over the tunnel on the cystoscope, and in most cases it is best first to thread the tip onto the catheter for about one inch before slipping it over the catheter canal.

These connections are made of the very best rubber and remain water-tight for a long time.

Reports of Societies.

SECTION ON GENERAL MEDICINE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING OF MONDAY, NOVEMBER 23, 1914, AT 8.15 P.M.

Dr. James E. Talley, in the Chair.

A CASE OF UNDETERMINED CONTINUED FEVER; ITS COURSE AND DESTINATION.

DR. B. F. STAHL AND DR. NORMAN B. GWYN: The case was that of a white woman aged 58 years, admitted to the wards complaining of pain in the lower left axilla. For many years she had been a steady drinker. She had been feeling poorly for about five weeks and occasionally feverish. There was a complete absence of physical signs except a few crepitations in the left axilla. No malarial parasites could be found. Wassermann reactions were negative; tuberculin, weakly positive; sputa repeatedly negative for T. B. The patient ate and slept well. A gradual wasting without pronounced anemia took place. At the end of five weeks there was distinct yellowing of the conjunctiva and enlarged veins coursing up over the thorax and down to the groins. Cirrhosis of the liver was definitely discussed in view of the history of alcholism. The patient failed rapidly and three days later swelling of the abdomen began and pain in the right side of abdomen became marked. Four days later signs of fluid in the abdomen were distinct. The development of a tubercular peritonitis was considered probable, or of a mechanical peritonitis from a quickly disseminating new growth. At no time in the last ten days of life did it seem likely that operative measures would avail. The autopsy showed atrophic cirrhosis of liver deeply indented, suggesting a syphilitic process. Small area of T. B. in left upper lobe anteriorly placed. Interior of abdominal walls is studded with irregular, small nodules; mesentery studded with small irregular nodules with hemorrhagic tops. Serous coat of intestines has lost its gloss and a fine fibrinous layer is over all; in a good light minute tubercle-like formations are evident in abundance. Lower 8 c. m. of cecum is an immense ulcerating thickened mass. Other ulcerations in intestines evidently tubercular. Sections show condition is tubercular. Tubercle bacilli are found in macerated tubercles from peritoneum.

DISCUSSION.

DR. JOHN K. MITCHELL: I had under my care about four years ago a somewhat similar case in which the fever lasted for six months. Every night during that time, with one or two exceptions, the man had a temperature of from 102 to 103½. The only other symptom was a peculiar sweat. Tests of urine, feces and blood were negative. A number of consultants saw the man,—Dr. Lewis, Dr. Weir Mitchell, Dr. Thayer and Dr. Osler. None threw any light upon the case, except that Dr. Thayer ingeniously suggested psittacosis, tuberculosis in parrots. There were numbers of crystals of uric acid in the sweat, the odor of which was so bad that the man was obliged to get up in the night and take a bath. I sent him to the country and had him sleep out of doors. After two or three weeks the temperature came down and the man recovered in six or seven months without our having made a diagnosis. He is now perfectly well and weighs 190 pounds. The diagnosis is still in abeyance.

DR. ROBERT N. WILLSON: Last year at the Philadelphia Hospital there was a little Porto Rican girl who ran what seemed to us to be a low grade broncho-pneumonia. Then for two or three days she ran a normal temperature. Following that she would have rise of temperature again and then a return to normal. Headache was the only other symptom. This lasted for four months. There was always positive tuberculin reaction to tests, but we could put our finger upon no focus. Finally the abdomen became greatly distended and we rashly called in the surgeon who operated and there was found in the centre of the abdomen a large caseous tubercular mass. This was removed with a tremendous loss of blood and the child died that night. Up to the day previous to the operation there was no suggestion of an abdominal condition, except a little tenderness over the appendiceal area.

DR. JOSEPH SAILER: I was interested in Dr. Gwyn's case because of the association of tuberculosis and cirrhosis of the liver. In my own experience I cannot say that in cirrhosis of the liver one case out of twelve had tuberculosis. In a case of prolonged fever under my observation some years ago there was also failure to reach a definite diagnosis. All tests were negative. The patient neither wasted nor gained and ran a temperature between 99 and 100, occasionally reaching 101. It was before the days of the Wassermann test. Upon the basis of the possibility of syphilis antisyphilitic remedies were used but without result. Another patient under my care had a temperature every day of 100. In six months' observations nothing very definite appeared. The woman gained about seven pounds upon prolonged rest cure, but did not lose her fever. Prolapse of the uterus was the only definite gynecological symptom. Dr. Clark operated in the hope of gaining more light on the case, when a fairly large solid ovarian tumor was removed. The patient lost her temperature and completely recovered her health.

DR. WILLIAM M. L. COPLIN: One point not accentuated is that in post-mortems we see an unusual type of tuberculosis in which caseation or other form of necrosis is slight or absent. The masses on the peritoneum in this case were elevated with hemorrhagic summits, often appearing almost papillomatous; the sand grain surface of miliary tuberculosis is absent. There were one or two ulcers in the intestine typically tuberculous. In many of these irregular forms of tuberculosis it is possible that we may find a tubercle bacillus of an unusual type. There is a fibrosclerotic change in the nodules which is very conspicuous. The appearance is almost that of complete healing with absence of caseation bringing forward the suggestion urged by French writers that there is a fibrogenic toxin produced by the tubercle bacillus differing from the caseogenous toxin commonly so characteristic of tuberculosis.

A CASE OF TYPHOID FEVER COMPLICATED BY ORCHITIS.

DR. S. H. ROSENTHAL: The case was admitted to the Philadelphia General Hospital, October 2, 1914. The patient who was 18 years of age passed through a mild attack of typhoid fever, the temperature became normal on the 13th day. Twelve days later the patient was seized with intense pain in the left lower portion of the abdomen. The temperature went up to 101; pulse rate was 120; leucocyte count 28,000. Distinct rigidity and tenderness were present in this area and the patient vomited twice. The following morning the pain shifted to the left testicle, the abdominal pain subsiding. The testicle and epididymis were found very much swollen and tender and the scrotum inflamed, with tenderness along vas and enlargement of left inguinal glands. The leucocyte count gradually came down to 9,000. Twenty days after the onset of this complication an incision was made in the left testicle and pus found. Typhoid bacilli were obtained in pure culture and were agglutinated by the patient's serum and the serum of another known typhoid case. Patient is still in the ward, the wound draining. There is no history of venereal infection. Orchitis and epididymitis are comparatively rare complications of typhoid fever, the percentage being about 0.2. Only a few more than 100 cases have been reported. Some arise from thrombosis of the spermatic veins; in a few the typhoid bacilli gain access to the epididymis and testicle by way of the vas from the urine, but in the majority of cases the source of infection is in the blood. The complication occurs most frequently between the ages of 15 and 25, appearing late in the disease or in convalescence, lasting from 12 to 18 days and terminating in resolution although induration and atrophy of the testicle or suppuration may occur. In the presence of suppuration there is apt to be extensive sloughing which practically destroys the entire testicle.

SOME OF THE UNUSUAL FEATURES OF TUBERCULOUS MENINGITIS.

DR. THOMAS MCCRAE: The report deals with a case of tuberculous meningitis in which symptoms had existed for eight weeks before death. There was a marked variation in the symptoms, the patient's mental condition changing from day to day. The eye symptoms were also variable, paralysis being present one day and gone the next. Retraction of the head and Kernig's sign were not particularly marked. Lumbar puncture gave a clear fluid with a cell count of 100. Tubercle bacilli were not found. At autopsy only a few tubercles were found on the cerebral meninges and there was little change in the meninges themselves. It seemed rather difficult at first to give an explanation of the symptoms when the autopsy findings were studied. The brain was hardened as a whole and when sectioned three caseous areas were found in the occipital lobes. These contained large numbers of tubercle bacilli. In this case many of the symptoms were apparently due to general toxemia and not to the local tuberculous process in the meninges. The variation in the eye signs seemed most probably to be from edema. The lungs showed a large number of very young miliary tubercles, evidently much younger than those in the meninges. The source of infection was apparently a tuberculous epididymitis.

DISCUSSION.

DR. WILLIAM M. L. COPLIN: The lesions in the gray and white matter of the brain of this case were old with distinct caseation. It is possible that the extension of infection may have occurred from them to the meninges rather than by hematogenous dissemination to the meninges, lungs and other organs. I am reminded of one case in which there was perfectly clear evidence of at least two eruptions of miliary tuberculosis. These were seen in the liver in the presence of definitely healed tubercles, and perfectly fresh granulations with absolutely no evidence of any reparative effort.

DR. JOSEPH SAILER: I recall the report of a case of tubercular meningitis in which after one or two years the patient died of some other condition and in which healed tubercular lesions were found in the meninges.

DR. B. F. STAHL: In a case reported by a colleague some time ago the patient had tubercle bacilli in the spinal fluid, had all the symptoms of meningitis and in addition had tuberculosis of the lungs; and, if I remember the case clearly, he had a cavity. The patient made a surprising recovery from his tubercular meningitis. He was at White Haven for four or six months. I saw the patient four years after he returned to Philadelphia. The development of the disease was entirely arrested and the man is now a timekeeper for one of our contractors.

DR. DAVID RIESMAN: There came under my observation some time ago a woman, stout and healthy looking, whose condition presented continuous fever with intense headache. There was history of two separate attacks of typhoid fever. There was no positive Kernig's sign, but some rigidity of the neck. Lumbar puncture showed the spinal fluid to be almost typical of tuberculosis. Complete recovery took place. The presence of small tuberculous lesions, it seems to me, is very important in the diagnosis of an obscure case which might be tubercular meningitis. I recall the cases of two middle aged women who seemed to have typhoid fever. In the examination of one a little lump was discovered in the back, probably the result of an old Pott's disease. Subsequently all the symptoms of miliary tuberculosis developed and the patient died of that disease. In the second patient the picture was definitely that of typhoid fever. She had also a little enlargement in the back. This together with the headache suggested tubercular meningitis which the condition was subsequently proved to be. I feel, therefore, that these small lesions, in the intestines, epididymis and in the joints are not infrequently the cause of a miliary tuberculosis or tuberculous meningitis. I would particularly point out that these little remnants of an old and forgotten Pott's disease are very interesting in diagnosis.

Dr. Robert L. Pitfield: In a case of meningitis seen in my service to-day lumbar puncture showed tubercle bacilli, diplococci and pneumococci. The edema of the face, choked disc and the fact that the complete coma was not relieved by lumbar puncture led me to think that possibly the cause of the comatose condition was a blocking up of the foramen of Monro and the overflow of fluid into the left ventricle. It occurs to me that this case of Dr. McCrae might be due to an accumulation of fluid as well as to the toxic condition mentioned.

Dr. A. P. Francine: I have seen three cases which developed many of the typical features of meningitis which remained for a definite period, and in which the diagnosis was made of tuberculous meningitis in the course of advanced pulmonary tuberculosis. All three cases cleared up without evidence of tuberculous involvement of the meninges or brain. I, therefore, look upon these cases as possibly of nephritic orgin or due to toxemia. I am rather skeptical of a tuberculous meningitis that recovers. I have seen such so-called cases recover, but there has been a complete absence of tubercular meningitis.

Dr. Alfred Stengel: One of two cases occurring to me is that of a woman who has just left University Hospital having been brought in with marked cerebral symptoms and developing soon after a paralysis of her external rectus muscle in one eye with marked diplopia. There was retinitis with swelling of the nerve head four diopters. There were somnolence and various other nervous disturbances not terminating in coma. The condition had begun with apparently acute infection which we eventually discovered to be tuberculous. She remained in the hospital for three or four weeks. While tuberculous meningitis was not demonstrated, its suggestion was very strong and it might possibly have been a case of healed tuberculous meningitis. Dr. deSchweinitz who saw the case with me, recalled to my mind a case we had seen together some years ago in which there were all the symptoms of tuberculous meningitis in a young boy in whom he had found tubercles in the retina. There was complete recovery from the meningeal and retinal conditions. These two cases suggest to me the possibilities of healed tuberculous lesions on the meninges.

THE ABDERHALDEN TEST WITH ITS RELATION TO DISEASE OF THE LIVER.

Dr. Joseph Sailer and Dr. T. G. Schnabel: Breitmann, having reported the successful application of the Abderhalden test in diagnosing destructive disease of the liver, an effort was made to confirm or disprove his statement. In all 43 cases that were examined the dialyzing method was used. In each case the serum and the substratum were tested separately and if free from dialyzable substances and negative with the ninhydrin test, they were tested together. If, after this a positive ninhydrin test was obtained, the result was considered as positive. Tests were also made whenever a sufficient amount of serum could be obtained with kidney, thyroid and placenta substratum, and when possible, several tests were made with the liver substratum. It was not possible in all cases to verify the diagnosis by autopsy or operation, but as far as possible, only very definite clinical cases of liver disease were included under that head. The following results were obtained:

Five cases of secondary malignant disease of the liver, all strongly positive.

Two cases of cholelithiasis; one strongly positive, and one faintly positive.

One case of cholecystitis with adhesions and jaundice, moderately positive.

Five cases of atrophic cirrhosis; all probably alcoholic; two were moderately positive; two, very strongly positive and one negative.

Four cases of passive congestion of the liver secondary to cardiorenal disease, all strongly positive.

Two cases put down as enlarged liver, positive.

One case put down as suspected liver disease without definite symptoms, faintly positive.

Three cases of syphilitic cirrhosis with positive Wassermann's, all positive. One of these was positive after the injection of salvarsan.

Two cases of hypertrophic cirrhosis, both positive.

The control with serum of a supposedly normal person gave a very faintly positive reaction with both liver and kidney substratum.

One case of renal insufficiency one week after induced abortion gave a strong reaction with liver, strong reaction with thyroid and intensely strong reaction with placenta.

Another case of supposed puerperal infection gave a strong reaction with placenta, but none with either liver or thyroid.

In a case of suspected pregnancy, afterwards proven not to be, there was no reaction with either tissue.

In two cases of lobar pneumonia the serum of both showed dialysable substances and gave a positive reaction with ninhydrin.

In one case of myxedema a very faint reaction was obtained with liver substratum but with no others.

In one case of known pregnancy there was no reaction with liver tissue, faint reaction with thyroid, and strong reaction with placenta.

In a case of malaria there was a strong reaction with liver tissue, with kidney tissue, and with thyroid tissue.

Case of multiple serositis there was a faint reaction with liver, thyroid and placenta.

In a case of recurrent alopecia, which had been diagnosed by two other physicians as disturbance of the thyroid gland, there was no reaction with any substratum.

On the whole the results indicated that the reaction was positive in the majority of known cases of liver disease and occasionally positive in cases not known or supposed to have liver disease, and in which the complete demonstration of a normal liver naturally could not be made.

DISCUSSION.

Dr. Philip L. Williams: We have used the Abderhalden test at the University Maternity for the last few years. From our experience and from the various reports upon the test it would seem that the underlying principle had not been fully worked out. For that reason, when one takes up such diverse pathological conditions as are seen in disease of the liver, great caution should be used in reading the results obtained.

DR. DAVID RIESMAN: Results obtained by Drs. Sailer, Schnabel and Williams show that as a biological fact the Abderhalden theory is indisputable. In its clinical application, however, confusion has apparently been wrought by a number of writers who have obtained contradictory results and discredited the theory.

DR. SAILER, closing: Our work was partly undertaken as the result of Breitmann's investigations. Whether subsequent results will be equally satisfactory it is impossible to tell. It is clear, I think to all clinicians, that diagnosis of liver conditions is in the most unsatisfactory state aside from certain well marked clinical conditions easily recognized. I think it can be said of the very considerable amount of work involved that we have set the subject rather fully before the medical profession, and that the results suggest that under certain conditions the Abderhalden test may in the future have an established value in certain morbid conditions of the liver.

THE DIAGNOSIS BETWEEN PRIMARY AND SECONDARY ACUTE CARDIAC PICTURES.

DR. ROBERT N. WILLSON: It is with a full appreciation of the intimacy of the confidence imposed upon the consultant and of the restrictions limiting the ownership of clinical data acquired in such relation that I venture to sketch briefly four cases seen in conference with medical friends, the study of which and of similar cases has led me to attempt to formulate a working scheme for the discrimination between primary and secondary acute cardiac clinical syndromes. The paper discusses briefly such acute cardiac pictures as appear in neurotic states, in gastrointestinal toxemias, in the pneumonias, in tuberculosis, in hyperthyroidism, in drug intoxications and other systemic embarrassments tending to obscure the real causal factor and to over emphasize the heart. The question asked me in clinic "How does it happen so often that the first signs of a pulmonary tuberculosis are heart or stomach symptoms" graphically defines the aim and the limitations of this study. There are two general conditions in which discrimination is difficult, and two cardinal principles upon which it appears to me rational to base our procedures. The first of the general conditions is exemplified in a patient experiencing cardiac symptoms in the presence of, though not necessarily due to, organic muscular or valvular disease of the heart. The second may be noted in one suffering from a cardiac syndrome in the entire absence of a recognized antecedent lesion, and perhaps in the presence of a heart normal heretofore, and still normal under ordinary circumstances. The first and best method I could suggest would be a deliberate and complete ignoring of the heart in the preliminary, physical examination, and a studied effort to explain doubtful symptoms on other grounds than those of cardiac disease. Failing in this, and forced at length to consider the heart as the *origo et fons mali,* I would propose as the second essential in the diagnosis a still further reluctance to attribute more of importance to the cardiac disease than is its due, and a continual remembrance of the intimacy of the interrelation between the heart and every other of the thoracic and abdominal viscera, also the brain, and the influence of this interrelation upon the symptoms arising from these organs. The lungs expand from the apex downward and carry the heart downward and the consequent interference with the veno-auricular flow is a far more vital menace than any mere mechanical obstruction in the pulmonary tissue. The bacteriemias and toxemias, however, and not the consolidations and congestions are the vital factors threatening the heart. Because of this fact both the myocardium and the gastric mucosa offer their early complaint in tuberculosis and pneumonia, and for the same reason, not infrequently, the cardiac or the gastrointestinal picture dominates the course of the pulmonary disease. Our first step, therefore, is directed toward the exclusion of primary pulmonary disease. Next in the order of important causes of secondary cardiac disabilities is the effect of gastrointestinal toxins. A mechanical factor in the form of tympanites may further embarrass the involved heart. Not infrequently acute renal or pulmonary conditions are contributory factors. The thyroid and pituitary disorders, the adrenal affections, the grave anemias, acute infectious diseases are to be considered. The point to be emphasized is, that a heart free from antecedent disease, may protest so vigorously concerning its vicarious distress that attention is diverted from the true etiology and treatment invited unavailing and detrimental. The second method of discrimination between the two pictures is the weighing of the influence of a known organic cardiac disease against the symptoms due to incompetency of other organs. All insufficiencies of the lungs, liver, kidneys, or gastrointestinal tract directly dependent upon cardiac disease, are properly a part of the primary cardiac picture.

There must be, however, sharp differentiation between symptoms attributable to an old valvular lesion with its accompanying myocardial degeneration, and lesions of intercurrent infectious pneumonia; between the syndromes of rheumatic endocarditis and myocarditis and the cardiac symptoms of an intercurrent gonorrhea, and distribution of the responsibility of symptoms in the coincidence of persistent influenzal pneumonitis or apical tuberculosis, and "rheumatic" or syphilitic organic cardiac disease. Careful history taking is an absolute essential. Study of the blood pressure, especially with respect to excessive pulse pressure or a cardiac overload, will often avoid the misinterpretation of an organic myocardial disease. We must by every rational endeavor avoid laying upon the heart an etiologic overload in the form of secondary symptoms.

◆

Book Reviews.

Dissection Methods and Guides. By DAVID GREGG METHENY, M.D., L.R.C.P., L.R.C.S. (Edin.), L.F.P.S. (Glas.). Philadelphia and London: W. B. Saunders Company. 1914.

This monograph by a Scottish anatomist is a manual of method and technic in dissection, intended to bridge the gap between the descriptive textbook and the laboratory. It aims to teach the student how to dissect, not what he is to discover by dissection. The work is illustrated with 12 plates representing lines of incision. It is a useful contribution to the pedagogic literature of anatomy.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, FEBRUARY 25, 1915.

Editors.
Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D. } *For the Massachusetts Medical Society.*
Frederick T. Lord, M.D. }

Committee of Consulting Editors.
Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.
Edward C. Streeter, M.D., Boston, *Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE LABOR CLEAN MILK BILL.

The Legislative Committee of the State Branch of the American Federation of Labor has introduced at the present session of the Massachusetts Legislature a clean milk bill (Senate No. 78), which is very simple and direct. Expressed in a few words, it seems to cover the most important defect in our milk health laws. The provision that no person shall be prosecuted until he has first had a warning notice, makes it absolutely fair to the handlers of milk and ought to make it satisfactory to them. The bill covers milk produced or handled out of the state to be sold in this state, which after all should be the main object of our protective legislation, both from the point of view of the public health and from that of fair competition for Massachusetts producers.

The Federation has also recommended an appropriation to make the law effective, which we understand will call for $35,000 "for the inspection of out-of-state dairies whose milk is sold in Massachusetts." This will enable the State Department of Health to maintain ten inspectors on the out-of-state dairies. The plan is to give up the out-of-state inspection by the six dairy inspectors of the City of Boston and have the Commonwealth do this work for all the cities and towns of the state. At present this work is incompletely done, and with few exceptions the only out-of-state inspection is that of the City of Boston. It is not fair financially for Boston to pay for inspection which accrues to the benefit of many other places. Under the new bill the out-of-state inspection will be more complete and will remove the injustice to Boston. In any event, Boston will pay one-third of the cost, as it does in all state expenditures.

The state-wide jurisdiction of the State Department of Health will give it a very great advantage over local boards so far as out-of- state work is concerned.

We recommend that all the various organizations which have been active in support of milk legislation during the last few years should this year give up their own particular bills and support the Labor Clean Milk Bill, in the interest of an early solution of the milk problem. The text of the bill is as follows:—

Section 1. Whoever, himself, or by his agent, shall sell or have in his possession with intent to sell or deliver to any person for purposes of sale within the state, milk, skimmed milk or cream produced or handled inside or outside of the state in insanitary, unclean or unhealthful surroundings, or by insanitary, unclean or unhealthful methods, shall be punished by a fine of not more than three hundred dollars or by imprisonment for not more than thirty days, or by both such fine and imprisonment in the discretion of the court. No person shall be liable to prosecution under this act unless he has first received a warning notice from the state department of health prohibiting him from selling such milk, skimmed milk or cream. The District, Municipal and Police Courts shall have jurisdiction in equity upon the application of the State Department of Health or of a local board of health to enjoin the sale of such milk, skimmed milk or cream."

This bill is a substitute for the more elaborate and comprehensive Ellis Milk Bill which has for several years past been defeated before the legislature and which has been given up by its proponents after consultation with the labor interests. The bill as it stands is endorsed by many local country boards of health. Essentially the same measure without the modifying clauses about notification and jurisdiction in equity is already a law in thirty-five states of the Union, including the largest. Communications from several of these states show that there has been no difficulty in enforcing the law. A letter from the chief of the division of creameries and dairies in one such state says in part:—

"In the several instances in which it has been necessary to prosecute dairymen for 'insanitary, unclean or unhealthy methods,' we have never failed to win a case, except where a jury composed of the friends of defendant rendered a verdict through sympathy. This happened in one or two instances several years ago and the cases were not appealed. Consequently, we have no ruling of the higher courts on these cases. During the past eight years, the few cases which we have brought have been decided in favor of the state on the testimony given by experts in this department. It usually happens that the courts here are in entire sympathy with our procedures, and they have frequently instructed juries to find verdicts in our favor.

"The use of the score card in our dairy inspections aids us very much, as each item of the dairy management is recorded and the inspector is enabled to explain to the court his reasons for allowing a small score on any item contained on the card."

Though perhaps not ideal, the Labor Clean Milk Bill seems an adequate and desirable measure, and physicians who approve it are urged to write to their senators and representatives in its behalf.

◆

LOCAL CARE OF ADVANCED TUBERCULOSIS.

BY the legislative act of 1911 it was required that each town in this Commonwealth of 10,000 inhabitants, or over, must make local provision, either by the building of a dispensary or by arrangement with adjacent towns, for the care of tuberculates among its population. Certain towns and many of the larger cities had already made such provision and others within a short time complied with the requirements of the act. There still remained, however, a number of communities coming within the provisions of this law which have made no such provision or arrangement.

In 1914 an amendment to this law was passed, giving the state health authorities power to establish a standard for such tuberculosis dispensaries, and at that time the following requirements were outlined for these institutions:—

"The tuberculosis dispensaries shall be open in the daytime during four days in the week, and during one evening in the week, this latter provision to take care of men who have to be at their work during the whole day. There shall be a physician competent to diagnose and to treat both incipient and more advanced cases of tuberculosis. There shall be a nurse, whose duty will be to serve the local cases; and eventually, if not in all cases at first, a social worker, whose business it will be to keep in touch with patients discharged from state sanatoria either cured or with the disease arrested."

Four years have now passed since the enactment of the original legislation but there still remain eighteen of the thirty-five cities in Massachusetts without tuberculosis hospitals of their own. Most of these cities send some of their patients to other neighboring cities. Of the eighteen cities without tuberculosis hospitals, five have taken no action whatever towards complying with the action, two have merely appointed a committee which has taken no action. In the remainder, apparent intention to comply with the requirement has progressed to varying stages of incomplete accomplishment. These eighteen cities without tuberculosis hospitals are Attleboro, Beverly, Brockton, Chelsea, Everett, Gloucester, Lowell, Malden, Marlboro, Medford, Melrose, Newburyport, Newton, North Adams, Quincy, Revere, Taunton and Woburn. Seventeen large towns are similarly unprovided for. Seventeen of the thirty-five cities in the state either have their own hospital or have made arrangement with a private local hospital. These seventeen cities having suitable tuberculosis facilities are Boston, Cambridge, Chicopee, Fall River, Fitchburg, Haverhill, Holyoke, Lawrence, Lynn, New Bedford, Pittsfield, Salem, Somerville, Springfield, Waltham, Westfield and Worcester. There is one county hospital in Hampshire and a bill (Senate No. 10) is at present pending before the General Court to provide permission for the establishment of a similar hospital in Barnstable County.

It is obvious that there is still a considerable part of the population of this Commonwealth unprovided with proper local accommodation for patients with tuberculosis, and it is urgently desirable that this deficiency should be made good as speedily as may be. Three methods are available by which any community may comply with the provisions of the act. Any city may build and maintain a hospital of its own; or it may arrange by contract with a private hospital for beds and care sufficient to accommodate its indigent advanced cases; or it may combine with neighboring communities in maintaining a joint hospital sufficient for the care of tuberculates within those communities. It was the original intention of this act to provide thus for the local care of advanced cases, the incipient and curable cases to be taken for more expert sanatorium treatment at the state hospitals. The problem of caring adequately for tuberculosis, of affording the opportunity of cure for those in the early stages, and of protecting the public against advanced cases, which are the principal disseminators of the infection, is one of the most important and one of the largest problems of public health which confronts civilization at the present day. Its solution cannot be expected until every community does its local part in such a well-laid and carefully detailed plan for action.

◆

ANTI-VIVISECTION LEGISLATION.

The usual annual legislative anti-vivisection agitation is at present being made in behalf of a bill now pending before the Massachusetts General Court forbidding the performance of any animal experiment on dogs. The text of this bill is as follows:—

"Section 1. It shall be unlawful to perform any physical or psychological experiment of a nature causing or likely to cause suffering, pain or disease to any living dog, for any purpose whatsoever, whether with or without anesthetics. This act, however, is not to be construed as interfering in any way with ordinary medical or surgical measures designed to restore to health or relieve from pain the animal under treatment.

"Section 2. Any person performing or assisting or taking part in performing any such experiment on any dog, in violation of this act, shall be punished for the first offence by a fine of not less than $50 nor more than $200, and for the second offence shall be punished by imprisonment for not more than one year, or by a fine of not less than $200, or by both fine and imprisonment."

A large petition has already been circulated in behalf of this bill, which was presented at a hearing before the committee on legal affairs on February 18.

At this hearing a number of advocates of the measure advanced the usual anti-vivisection arguments, with others based on the present European War, which they attributed to the brutalization of some of the contestants by the practice of vivisection. Dr. W. B. Cannon, Dr. Theobald Smith, Dr. Langdon Frothingham, Dr. Reid Hunt, Dr. Elliott P. Joslin, Dr. David L. Edsall and Dr. Harvey Cushing appeared as opponents of the measure. Dr. Frothingham pointed out that the bill as it stands would prevent veterinarians from experimenting upon dogs, and Dr. Cushing emphasized the misinterpretation habitually placed by anti-vivisectionists upon the technical reports of animal experiments. Further consideration of the question was deferred to a later meeting of the committee.

It is hardly necessary to call attention to the undesirability of such legislation, which, like all measures of its kind, is inspired by the most humane though mistaken motives and in reality will prevent no avoidable suffering and would seriously hamper legitimate animal experimentation.

◆

IMMIGRATION OF THE INSANE AND MENTALLY DEFECTIVE.

In another column of this issue of the Journal we publish in full a copy of the statement presented before a hearing given on January 22 on the immigration bill (House 6060), then pending before the National Congress. This statement relative to proposed amendments in this bill, relating to the exclusion and deportation of insane and mentally defective immigrants, was made on behalf of a delegation representing numerous state boards of insanity, the National Committee for Mental Hygiene, and other national and local organizations for psychiatry and mental hygiene. This delegation made clear that its appearance was not in behalf of the illiteracy test, but to point out the importance of provisions relating to the exclusion of insane and mentally defective. The members of the delegation represented that the amendments which they suggested should be included in the bill as measures dealing with administrative matters of public health. Whatever individual opinion may be upon the subject of immigration, it seems clear that the importance of controlling the increase in the number of our alien insane and defective by some such measures as those advocated in this statement should be made the subject of further earnest legislative efforts by the medical profession.

LOCATION OF METALLIC SUBSTANCES IN THE TISSUES.

FOREIGN medical journals have recently contained numerous publications of new radiographic and other methods for locating metallic foreign bodies in the tissues. In another column of this issue of the JOURNAL we publish a leading original article by Dr. Monks presenting a preliminary report of his new and ingenious method of employing magnetism for this purpose. Personal demonstration of this method carries conviction of its feasibility and practical value and we take pleasure in calling the attention of the profession to this new and valuable device of surgical technic.

◆

MEDICAL NOTES

NEW YORK DEATH RATES.—The most noteworthy feature of the mortality during the past week was the great increase in the number of deaths of infants under one year of age, there being 262 deaths recorded at this age group, the increase being confined to the boroughs of Manhattan and The Bronx, and being probably due to an increased mortality among infants from pneumonia and diarrheal diseases. At all ages above five years the mortality was considerably below that of the corresponding week in 1914.

There were seven less deaths reported during the past week than in the corresponding week of 1914, and a lower death rate by .62 of a point, which, taking into consideration the increase in population, is equivalent to a decrease of 69 deaths during the week.

Seven weeks have now elapsed since the first of January, 1915, and the death rate for that period is 13.92 per 1000 of the population, which is .67 of a point less than the rate in the corresponding period of the year 1914.

RECEPTION TO GENERAL GORGAS.—Surgeon General Gorgas, of the United States Army, was tendered a reception and banquet at the Hotel McAlpin, New York, on the evening of February 6th, by the New York Division of the Medical Reserve Corps. In addition to the members of the Association, a large number of regular medical officers were present, including Colonels Maus, Richard, Brechemin, and Bradley. Dr. Reynold Webb Wilcox, president of the Association, was toastmaster, and the speakers, other than the guest of the evening, were Colonels Maus and Richard, Drs. John A. Wyeth, George H. Fox, and W. M. Brickner. General Gorgas, in the course of his remarks, stated that the Army has supplies at present to take care of 400,000 men in the field.

CHICAGO TUBERCULOSIS SANATORIUM.—On February 16, the new Chicago Municipal Tuberculosis Sanatorium was formally dedicated with appropriate exercises. It already provides accommodation for 650 patients and will eventually accommodate 950. The buildings have been erected at a cost of $2,400,000.

BUBONIC PLAGUE IN HAVANA.—Reports from Havana on Feb. 13 and 17 state that three cases of bubonic plague have recently been discovered in that city, all of which have already died. All wharves and houses near the water front have been disinfected and rigorous search for infected rats has been instituted.

EPIZOÖTIC OF FOOT AND MOUTH DISEASE.—Report from Peoria, Ill., on February 10 states that thirty-five new cases of foot and mouth disease have recently been discovered in Peoria County. The infected cattle have been killed and the quarantine of this county has been restored.

On February 2, the Kansas Legislature voted an emergency appropriation of $20,000 to carry on a campaign against foot and mouth disease in the four counties of that state which are still under federal quarantine.

On February 15, the East Buffalo stockyards were again placed under complete quarantine. On the same date the United States Department of Agriculture extended the quarantine area so as to include all the territory east of the Mississippi and north of Tennessee in a restricted area out of which no shipments of livestock to the south or west will be permitted, except for slaughter within 48 hours. The Department issued the following statement explanatory of this action:—

"The recent discovery of a few cases where cattle, shipped from areas where the disease had existed, carried it to previously uninfected sections, such as four counties in Kansas, convinced the Department that no precautions will make such shipments absolutely safe. The new measure, it is said, should confine the disease to regions in which it has already made its appearance and in which the work of eradicating it will be pushed as before.

"In this restricted territory, livestock may be moved freely to other points within the same territory, but cannot pass beyond the limits of the quarantined area, except for immediate slaughter. The regulations governing the area known respectively as closed, exposed and modified, remain practically the same as before."

RIBERI PRIZE.—It is announced by the Royal Academy of Medicine at Turin, Italy, that the thirteenth Riberi prize of the value of $4,000 is offered for the best work of medical research presented before December 31, 1916. Further information may be obtained from Dr. V. Oliva, secretary of the Academy.

INFANT MORTALITY IN AN ENGLISH CITY.—A recently published annual report of the public health officer of Huddersfield, England, records the data of infant mortality in that town for 1913. Huddersfield is a typical manufacturing city with a population of about 111,000, increasing at a rate of about 1% per annum. The density of population is about ten to the acre. The mortality rate from all causes in 1913 was 14.77, which was .71 below the average for the preceding decade. The marriage rate was only 8.35 per thousand and the birth rate only 19.5, a decrease of one-half since 1872 and one-quarter since 1902. In the same year the death rate of Boston was 16.1 and the birth rate 26.17. The infant mortality of Huddersfield in 1913 was 103 per thousand, the average for the 96 largest cities of England and Wales being 117. The most frequent causes of infant death in Huddersfield are prematurity and bronchitis, whereas in Boston diarrheal disease and prematurity rank foremost.

PREVALENCE OF MENINGITIS AND POLIOMYELITIS.—During the month of December, 1914, 39 cases of cerebrospinal meningitis and 7 of poliomyelitis were reported in New York State. During the same month 10 cases of poliomyelitis occurred in Mississippi.

EUROPEAN WAR NOTES.—Report from Venice by way of London on February 13, states that during the first week of February there were 423 cases of typhus fever in Austria and that small-pox is spreading in epidemic form in Vienna.

Report from Washington on February 9 states that the Russian Government has refused to permit an American expedition from Pekin, China, to engage in relief work among the German and Austrian prisoners in Siberia. It has, therefore, been decided that a portion of the American supplies furnished by the American Red Cross shall be turned over to Russian military authorities for use in prison camps. Two American physicians have volunteered to go to Siberia with these supplies if the Russian Government grants permission.

Report from Washington on February 12 states that the French foreign office has requested that one of the American Red Cross Units at Pau be transferred to Dunkirk or some other point in the northeast. In view of the number of serious cases now under care at Pau, however, it has been decided by the American Red Cross to authorize the offer of another hospital unit for service in France at Dunkirk or elsewhere, the unit at Pau being retained at its present post.

The weekly bulletin of the United States Public Health Service for February 5 records great activity in plague prevention at Liverpool, England, where much apprehension is felt of the introduction of the plague during the war. During the fortnight ended January 2, 234 rats were killed and examined at Liverpool but none was found to be infected. When certain precautions have been consistently carried out by vessels from the moment of arrival until that of departure, a certificate as to the precautions taken to guard against the introduction of rats on the vessel during its stay at Liverpool is issued.

"The first step taken is to secure a notification of the arrival of a vessel which is, so to speak, a candidate for such a certificate, prior to its reaching the dock. If such a warning is not given which will allow an inspection immediately on the arrival of the vessel no certificate can be obtained, as notifications after the arrival of a ship are not acted upon. All of the regular steamship lines understand this, and no difficulty is experienced in receiving notification in due time to admit of the inspector ascertaining by his own visit to the dock what precautions are instituted. The requirements are: That a vessel be kept at least six feet away from the quay at all times; that rat guards be placed on all lines connected with the ship, and that the said guards shall be of an adequate character; that all lighters alongside the vessel shall be a sufficient distance from the upper part of the ship's first deck to render it impossible for a rat to transverse the intervening space, and that all ropes connecting said lighters shall be properly guarded, or shall be light lines so small as to make their use by a rat impossible.

The inspector visits each ship in port which is held under observation on an average once each day, and at irregular hours, and a record of each visit, with a note as to his findings, is made in a permanent record book.

Just prior to the proposed sailing of a vessel the owners or responsible agents submit a statement in writing as to the steps that have been taken to guard against the entry of rats to the ship. If this statement agrees with the daily record of the inspector it is indorsed by the consular officer issuing the bill of health showing that it is correct, and the same is attached to the bill of health. Indorsement is also made on the bill of health."

On February 19 the total of the New York Belgian Relief Fund amounted to $932,684.28; the New York Red Cross Fund to $460,060.47; the American Jewish Relief Fund to $482,952.13; the American Ambulance Hospital Fund to $326,870.86; the Committee of Mercy Fund to $118 804.92; and the Prince of Wales Fund to $109,893.49.

On February 20 the total of the New England Belgian Relief Fund amounted to $217,923.93; Massachusetts Red Cross Fund to $110,098.12; the American Polish Relief Fund to $22,874.97; the Jewish Relief Fund to $36,508.21; the British Relief Fund to $19,916.84; the Lithuanian Relief Fund to $10,333.49, and the Boston Branch of the American Ambulance Fund to $54,006.45.

BOSTON AND NEW ENGLAND.

ANGELL MEMORIAL ANIMAL HOSPITAL.—It is announced that the formal dedication of the new Angell Memorial Animal Hospital, of which a full description was published in the issue of the JOURNAL for January 21, will take place on Thursday afternoon, February 25, between two and five o'clock.

MASSACHUSETTS SCHOOLMASTERS' CLUB.—At a meeting of the Massachusetts Schoolmasters' Club in Boston on February 12, Dr. Richard C. Cabot of this city spoke on the subject of "Health from the School Standpoint," and urged the establishment of school clinics for the education of pupils in practical hygiene. Dr. Thomas F. Harrington, director of the department of hygiene of the Boston public schools, presented a series of results from statistical examinations of Boston school-children and urged that the matter of health in the schools should be regarded as an educational problem. Dr. David Snedden of the Massachusetts state board of education and Dr. Thomas A. Storey, director of the department of hygiene of the College of the City of New York, also spoke in favor of public school health education.

MASSACHUSETTS VITAL STATISTICS IN 1914.—A recent report of the Massachusetts Secretary of State records in preliminary form the vital statistics of this Commonwealth for the year 1914.

"The report shows that there were 31,403 marriages and 91,644 births in the state last year, an increase of 505 marriages and 1,762 births over 1913.

"Last year 59,564 persons died in Massachusetts, a decrease of 1,122 as compared with 1913. The births in 1913 thus exceeded the deaths by more than 32,000."

FOOT AND MOUTH DISEASE IN NEW ENGLAND.—Simultaneously with the recurrence of foot and mouth disease in several of the Western States, as previously noted in this issue of the JOURNAL, there has been a recrudescence of the epizoötic of this infection in Massachusetts and other New England States. The outbreak of last fall involved 32 cities and towns and nearly 1,200 cattle of this commonwealth. The present outbreak, which has been in progress since February 1, already involves eight cities and towns and 249 cattle, of which 181 have already been slaughtered. Of the cases thus far reported there have been 10 in Chicopee, 25 in New Braintree, 24 in Oakham, 19 in Southboro, two in Springfield, 82 in Waltham, 22 in Watertown and 65 in Worcester. In Rhode Island new cases have been discovered at Smithfield and Pawtucket. It has not been determined how the infection has been reintroduced into the New England States, but its discovery has been prompt, the machinery for dealing with it ready and the rigorous methods of quarantine and slaughter instituted, should bring this epizoötic to a much speedier end than its predecessor with a minimum destruction of property.

Miscellany.

AMENDMENTS IN THE IMMIGRATION BILL (H. R. 6060) WHICH RELATE TO EXCLUSION AND DEPORTATION OF INSANE AND MENTALLY DEFECTIVE IMMIGRANTS*

THE gentlemen for whom I have the honor to be the spokesman desire to bring to your attention certain provisions in the immigration bill which relate to insane or mentally defective aliens and to state very briefly the reasons for these amendments to the present immigration law. There are no other provisions in this bill which, in our opinion, are of greater importance than these or likely to prove more beneficial to the people of this country if enacted into law.

Those whose views I wish to present are the chief executive officers of boards which have to do with the care of the insane and the mentally defective in the following states: Massachusetts, Rhode Island, New York, New Jersey, Pennsylvania and Maryland. In the public institutions of these six states are to be found nearly three-fourths of all the insane or mentally defective immigrants who are receiving public care in this country. In addition, I desire to speak for the following national or state societies devoted to the study of insanity and mental deficiency, the promotion of the care of those suffering from these conditions, or the prevention of mental diseases; the National Committee for Mental Hygiene, the American Medico-Psychological Association, the American Genetic Association, the Committee of One Hundred on Public Health, the New York Psychiatrical Society, the Mental Hygiene Committee of the New York State Charities' Aid Association and the Eugenics Record Office. Properly accredited representatives of each of these State Boards and of each of these societies are in this room. Although what I have to say has the unqualified endorsement of all these gentlemen, each is ready to speak for his own State or for his own organization and to give any specific information which you may desire.

The states whose representatives are here today are literally staggering under the burden of caring for their insane. There are in all public institutions approximately 200,000 insane persons—a number exceeding the number of students enrolled in all the colleges and universities in this country. If all the states had provisions comparable with those existing in the most advanced ones, thre would be more than 300,000 insane patients in the hospitals today. If there were added those in whom serious mental disease exists but is unrecognized, the number under treatment would reach half a million.

---

* Presented by Dr. Stewart Paton on behalf of a delegation representing State Boards of Insanity and national and local organizations for psychiatry and mental hygiene.

To this great number 60,000 new patients,—an army nearly as large as our regular army—are added every year. The cost of conducting the institutions in which this vast number of persons is cared for is so great that in several states it is exceeded only by the amount expended for education. In New York, the expenditures for the insane are one-fourth of the total annual appropriations of the state. Even with these great sums devoted to the care of the insane of the United States much remains to be done. In many states large numbers of these sick persons are not yet delivered from the misery and degradation of jails and almshouses and in very few states is our duty to the most unfortunate of the community's wards fully discharged. In the case of the mentally defective existing provisions are still more inadequate. It has been estimated by careful students of the subject that only 10% of all the feeble-minded are in suitable institutions. The others are unjustly confined in prisons and reformatories, inadequately cared for in almshouses or at large in the community, often a menace to the morals and to the safety of others and more often themselves the victims of greed or lust. Enlightened states are keenly aware of the importance of solving the great problem of providing for the mentally defective, but the magnitude of the task is such that our legislatures are reluctant to undertake it.

What can be said of the intelligence of a country which, just awakening to this vast problem and just stirring itself to deal with it, fails to take every necessary precaution to prevent the task being rendered still more difficult by a large and steady influx of the insane and the mentally defective of other lands? In requesting that Congress provide us with an immigration law under which the insane and mentally defective can be excluded, we cannot be accused of inhumanity. The gentlemen whom I represent are devoting their lives to the welfare of these persons. They are engaged constantly in the endeavor to render relief to those suffering from mental diseases more effective and more humane than it is at present, but when they see their institutions so over-crowded that patients have to sleep on the floors of wards and corridors, when year after year they see their charges suffer through the reluctance of legislatures to grant the great appropriations needed for proper care and treatment, and when they realize that the beds occupied by aliens could be filled at once by citizens waiting for treatment, can they be blamed for asking for better provisions in the immigration law? Aliens and citizens share alike in this great humanitarian work, but need this half-loaf be divided?

The states which I have named receive their population chiefly through immigration. The number of immigrants who come to New York State to settle permanently every year is greater than the number of babies born. The application, through eugenics, of the facts learned by the scientific study of human heredity will doubtless make it possible in years to come to cut off defective strains so that fewer babies who have inherited the mental defect of their parents will be born, but how weak are efforts in this direction compared with the enormous need! It is in the elimination of the insane and the mentally defective from the great tide which flows through Ellis Island that the most practical and humane field for the control of insanity and feeble-mindedness in this country is to be found.

It may be said that the present immigration law excludes the insane and mentally defective. In reply I have only to say that, under the present immigration law, our public institutions have been filled with the alien insane. There are serious defects in the immigration law and these defects have long been recognized not only by those who care for the alien insane and mentally defective in the public institutions of this country but by the medical authorities actually engaged in the examination of immigrants at our ports of entry. The amendments which I will read are endorsed not only by the state boards and medical organizations which are represented here today but by every national medical organization which is interested in psychiatry and by more than twenty state and local medical organizations.

They were framed with the constant guidance of experienced medical officers of the gavernment service, who had discovered the inadequacies of the present immigration law in their daily work at Ellis Island. Together we have urged them upon the attention of Congress and the only opposition which they have received from any source has been from those steamship companies which are willing to bring to this country any unfortunate immigrant who can be persuaded to come and who can get through one of the convenient loop-holes in the present law.

Listed in the order of their importance, these are the amendments which we desire to advocate:

1. Providing that medical officers of the United States Public Health Service who have had special training in the diagnosis of insanity and mental deficiency shall be detailed for duty at ports of entry designated by the Secretary of Labor and that the services of interpreters and suitable facilities for making mental examinations and observing cases shall be provided for these medical officers.

2. Providing that the surgeon of each vessel shall make a mental examination of each immigrant before accepting him for passage. (A physical examination only is required at present).

3. Providing a fine of $200 for bringing to this country any insane or mentally defective

person whose condition could have been detected by a competent medical examination at the time of embarkation.

4. Adding constitutional psychopathic inferiority and chronic alcoholism to the excludable causes.
5. Making it mandatory for the Secretary of Labor to provide suitable attendants for immigrants being deported, when they require personal care on account of mental or physical disability.
6. Increasing from three to five years the period in which deportation of aliens who have become a public charge in this country can be effected—unless it can be affirmatively shown that their dependence is due to causes arising subsequent to landing.
7. Providing that deportation can be effected subsequently if proceedings are *instituted* within five years.

We advocate these amendments as medical men trained in the department of medicine which has to do with mental diseases. In our opinion, these provisions in the bill before you overshadow all others in importance and we especially desire to state that we are here solely for the purpose of presenting the reasons for their inclusion in the immigration law. Although other provisions in the law may be desirable and some may be inadvisable, we wish to confine ourselves strictly to those matters regarding which we have special knowledge. The amendments which we advocate deal with complex problems in a highly specialized branch of science and we have felt that the views of men who are devoting themselves to this work might be of value to you in forming an opinion as to the need of the amendments which I have read and as to the results likely to be gained by their adoption.

* * *

EARLY HISTORY AND SUPPRESSION OF THE OPIUM TRAFFIC.

REPORT from The Hague by way of London states that on February 12 the protocol of the anti-opium convention of 1912, at which 44 nations were represented, was signed by the delegates of the United States, China and the Netherlands. This convention aims at the suppression of the opium traffic and the illicit international traffic in cocaine and other habit-forming drugs; and its signature by these three representatives brings it automatically in force in the three respective countries having an approximate population of about 475,000,000 persons. Mr. Henry VanDyke who, as American Minister to the Netherlands, represented the United States as a signatory, made the following statement with reference to the convention:—

"The opium convention aims at putting a stop to the vicious trade in opium as an intoxicant and at imposing the strictest regulation on the legitimate commerce in opium for purely medicinal purposes. I hope that the three nations which have taken the first definite step in this direction soon will be followed by many others. It is a great satisfaction that China, which has suffered most from the opium vice, has taken this step side by side with the United States, which is the foremost nation in adopting legislation against this vicious trade, and that Holland, with her immense possessions in the East Indies, should take the same stand."

The *Journal of the American Medical Association* for February 6 contains an important leading article by Dr. Macht on the early history of opium and some of its preparations and alkaloids, from which the following extracts are of particular interest in connection with the signature of this convention:—

"The medicinal properties of poppy juice date from a remote period. Recalling the highly developed culture of the ancient Egyptians one is inclined to imagine that the narcotic properties of opium were known to them; but the investigations of Unger (1857) have failed to trace any acquaintance with opium in Ancient Egypt, and Dr. Ember, of the Semitic Department of Johns Hopkins University, knows of no reference to it in Egyptian literature. According to some Hebrew scholars, there is a reference to poppy juice in the Bible. In several passages in the Old Testament the word *rôsh* is mentioned. Professor Haupt is convinced that *rôsh* means poppy, and so also is Professor Post. In the Talmud we have one reference to opium, under the name *ophion,* but that word was clearly borrowed from Greek. In the classical Hindoo literature there is found no reference to it. From the time of the Mogul Conquest on there appears a word *Khash-khash* which means poppy-seed, and *Khash-khasharasa,* juice of the poppy. In this it is easy to recognize our modern word *hashish;* and so it seems that at that early date the narcotics opium and cannabis indica were confused with each other. The original home of the poppy was in Asia Minor. From there it was carried to Greece at a later period.

"It is not at all certain whether Hippocrates was acquainted with the juice of the poppy. According to Wootton, he refers to a substance called *mecon* to which he attributes a purgative as well as a narcotic action. Some think that it was opium; others believe that he was referring to another plant. In any case, he made but very little use of the drug. The first authentic reference to the milky juice of the poppy we find by Theophrastus at the beginning of the third century B. C., when he speaks of it as meconion. Scribonius Largus, in his 'Compositiones Medicamentorum,' about the year 40 of the present era, describes the method of procuring opium from the capsules of the poppy, and about the year 77 of the same century Dioscorides makes a distinction between the juice of the capsules and the extract of the whole plant. He describes the method of incising the capsules, and refers to adulterations of the drug with the milky juices of other plants so that it is evident that the collection of opium was quite an industry in Asia Minor at that time. Pliny devotes some space to a description of opium and its medicinal use, and the drug is mentioned repeatedly by Celsus in the first century and by numerous other Latin writers. Galen spoke enthusiastically of the virtues of opium confections, and the drug was soon so popular in Rome that it fell into the hands of shopkeepers and itinerant quacks.

"The introduction of the drug to the natives of the East was through the Arabs, and in the first instance to Persia. Its introduction to India seems to have been connected with the spread of Mohammedanism.

"The Arabic physicians used opium very extensively, and even wrote special treatises on some of its preparations. The earliest mention of opium as a product of India is by the traveler Barbosa, in 1511. A Portuguese historian, Pyres, in a letter to Manuel, King of Portugal, in 1516, speaks of the opium of Egypt and Bengal.

"Opium is supposed to have been brought to China first by the Arabs, who are known to have traded with the southern parts of the empire as early as the ninth century. Later the Chinese began to import the drug in their junks from India. It was not before the second half of the eighteenth century that the importation of opium began to increase rapidly through the hands of the Portuguese, and a little later through the famous East India Company. In 1770 the English established an opium depot in Lark's Bay, south of Macao, and the traffic rapidly increased, so that very soon the Chinese authorities began to complain, and in 1820 an edict was issued forbidding any vessel having opium on board to enter the Canton River. A system of contraband followed, then political friction between England and China, and the so-called Opium War, which culminated in the Treaty of Nanking (1842) by which five ports of China were opened to foreign trade, and in 1858 opium was admitted as a legal article of commerce. By that time the vice of opium-smoking had spread like a plague over the gigantic empire, and became so deeply rooted that, in spite of innumerable edicts and decrees, all efforts to check its growth have been powerless."

◆

NAVAL SURGERY A CENTURY AGO.

In a recent issue of the *British Medical Journal* are quoted abstracts from articles published in the July and October parts of the *Edinburgh Medical and Surgical Journal** for 1814, representing some experiences of naval surgery during the close of the Napoleonic era a century ago:—

"There are three cases of gunshot wounds of the thorax, with annotations, by Joseph Arnold, M.D., surgeon, H. M. S. *Alcmene.* There is a fatal case of hydrothorax, with appearances on dissection, by Mr. Archibald Robertson, surgeon of H.M. S. *Cydnus;* there is the letter from Joseph D. A. Gilpin, M.D., inspector of army hospitals at Gibraltar, to Colin Chisholm, M.D., F.R.S., etc., on the fever which occurred at Gibraltar in 1813; and there are letters from Dr. Chisholm on yellow fever, and answers by D. Bancoft, written with some degree of heat; there is a report on the use of charcoal powders as a substitute for cinchona by R. Calvert, physician to the forces; there is a case of hemiplegia in a soldier in His Majesty's West India Regiment, treated with tinctura lyttae (cantharides) and cold shower-bath, by Robert Hartte, surgeon to the forces; there are observations on pemphigus (in Russian sailors) by Dr. Dickson, physician and inspector of the fleet, etc., on the North American Station; and there are observations on the use of ipecacuanha and opium in dysentery, by Mr. William English, surgeon. In all these articles military matters are prominent; in fact, the atmosphere is that of war—war with its traumatisms and its subsequent plagues, pestilences, and famine diseases; war *matribus detestata,* but ameliorated, and with some of its worst sufferings mitigated by medical knowledge and surgical skill.

"Of Dr. Arnold's cases the second† was interesting, both from its medical and its general aspects. The wounded man was Christofolo Rodomere, a Venetian, rich in goods, and the owner of a vessel bound in May, 1812, from Venice to Bocca di Cattaro, passing therefore from Napoleon's 'Kingdom of Italy' to the Province of Illyria. Unfortunately for the vessel and for Rodomere, who was on board, one of His Brittanic Majesty's frigates, cruising up and down in the Adriatic with her sailors on the look-out, sighted the Venetian. To be seen meant to be captured, 'not before her crew,' adds Dr. Arnold, with evident regret, 'which consisted of about a dozen persons, had killed or wounded twenty-seven of the frigate's men.' The frigate, one may judge, pretty nearly caught a Tartar on this occasion. Poor Rodomere, in a desperately wounded condition, was handed over to the surgeon, and he found that whilst his left thumb was badly shattered and his left side from hip to ribs was much bruised, a leaden ball had also entered near the tenth rib, three finger-breadths from the spine, and had come out about an inch below the nipple of the left breast. When he received the wounds he fell and spat up blood by coughing, 'but after this he became quiet, his pulse was moderate, his breathing free, and he did not complain of pain.' This happened on the night of May 22nd. He took three laxative pills, had cataplasms applied to his thumb and to the wound in the side, and saturnine lotion to the anterior wound. For the next few days he went on nicely; but on May 30th the anterior wound began to be tender, and a full inspiration gave pain, and Dr. Arnold was led to take stronger measures. These, in the Latin tongue, into which the surgeon was wont to diverge on such occasions, were as follows: 'Fluat ex templo sanguis ad ℥xx; capt. etiam pilulas laxantes tres; pergat in usu cataplasmatum et aliorum.' On the next day he was worse, so Dr. Arnold again took steps: 'Iterum fluat sanguis ad ℥xx; bibat ad voluntatem aquam succo limonum gratam redditam; sumat pilulas laxantes duas,' and so on. The patient got no better; indeed, on June 1st, when the dressings were removed, nearly 2 lb. of watery lymph tinged with blood and slightly fetid were discharged from the wound in the vicinity of the heart."

---

* *Edinburgh Medical and Surgical Journal,* Vol. x, pp. 265, 295 311, 318, 325, 403, 419, 451, 458.

† *Edinburgh Medical and Surgical Journal,* Vol. x, p. 274, 1814.

Apparently the bullet had been deflected and had passed around the chest under or along a rib. The man improved after July 22, and by the end of August was able to pull an oar in an open boat.

This Joseph Arnold, the author of these clinical records, was born at Beccles, England, in 1782. He received the degree of M.D. at the Edinburgh Medical School in 1807, and in 1808 entered the medical service of the British Navy. As a youth his chief interest had been in the natural sciences.

"Even on active service Arnold's instincts as a naturalist peeped out, as has been seen, in the interest he took in *Plantago lanceolata* in the treatment of hydrothorax; and, after the war was over and the navy reduced, he gratified his love of research, and at the same time occupied his professional talents by taking medical charge of the *Northampton*, bound to Botany Bay with convicts. During his travels he made a collection of insects from South America, New Holland, and the Straits of Sunda, and also wrote several journals of notes on zoölogical matters; but unfortunately all these were lost in the burning of the ship (the *Indefatigable*) by which he was proceeding to Batavia. Not daunted he made several excursions with Sir Stamford Raffles in Sumatra. He returned home in 1816, but only that he might the better prepare for further travels and zoölogical research in the East. Sir Stamford Raffles was by this time (1818) governor of Sumatra, and Arnold obtained employment as naturalist under him. During his second visit to this island he discovered the strange parasitic plant which grows on the wild vine, has neither stem nor leaves, but possesses a flower of great weight, measuring 3 ft. in diameter. Sir Stamford and Arnold are to this day associated together in the name which this plant bears, the *Rafflesia arnoldi*. Arnold also made a fine collection of fossils and shells, which he bequeathed to the Linnean Society, of which he had been made a Fellow in 1815. He fell a victim to fever, however, at Padang, in Sumatra, in July, 1818, and died 'devoted to science and the acquisition of knowledge, and aiming only at usefulness.' "

Correspondence.

PARIS LETTER.

THE REHABILITATION OF THE HONORABLE PUS-BUG.

(From Our Foreign Correspondent.)

PARIS, FEB. 2, 1915.

"How are the mighty fallen! Tell it not in Gath . . . lest the daughters of the uncircumcised triumph."

"How are the mighty fallen in the midst of the battle! . . . I am distressed for thee, my brother Jonathan."—(II. Samuel, Chap. 1.)

Mr. Editor: There, you see; those sentiments are rather neat. A little knowledge of Scripture is not a bad thing, after all; and those lines express my feelings to a nicety. The true sportsman, the man who "plays the game," is supposed to be he who can take a blow without flinching, even with a smile, and who, when the fight is over, dismisses the matter entirely from his mind, shakes hands with his adversary, and harbours no malice. This beatific state of mind is observed in its most perfect form among the British; two statesmen, who during a week's debate have been moving heaven and earth each to demonstrate that the other is the blackest villain conceivable, will at the end be detected quietly dining with each other at some restaurant, to all intents and purposes on the friendliest of terms. *My* mentality is of the very contrary order; *my* Christian doctrine is never to forget an injury, but to try and repay my adversary, and with interest, even if it takes a lifetime. This is why at the present juncture my midriff is gently pulsating with sinful satisfaction, as I contemplate the depths of ignominy into which the surgical clan has suddenly fallen.

[To an audience of medical men it is superfluous to lay stress on the condition of inferiority, even of downright degradation, in which we have been living during the last few decades *vis-à-vis* to our surgical colleagues. Nor is it necessary to recall their airs of disdain, their mock humility: "Oh, I'm only a surgeon, I don't know anything about that," or the condescension with which they tolerate our presence at a distance, as we view them going through their sacred rites on the other side of a glass screen, even the circumambient ether in which they move being unfit for the vulgar to breathe: *procul, O procul este, profani!*]

When I think of the undoubted paradise in which these gentlemen of the knife have been accustomed to live, especially the younger set, who have seen only the aseptic era, and then compare it with the hideous gloom of Tartaros and Styx into which this war has suddenly plunged them, I try, but altogether in vain, to picture to myself what their frame of mind can be. At one moment to be firmly convinced that the millennium was at hand, that perfection had practically been attained, so that there was really nothing in the way of a surgical intervention that could not be undertaken with entire safety, so far as any danger from infection was concerned; at the next to realize that the clock had been suddenly set back fully fifty years, to see every wound in a large hospital oozing, weeping, even flowing into pus, and to feel that it was not safe so much as to sew up the flaps of a simple amputation,—"how are the mighty fallen," as I quoted in the beginning!

How those good old pus-bugs must be hugging themselves, to find themselves once more before the foot-lights, and as star performers, if you please. For the whole crew of these phantoms of a bygone age have turned up smiling, from good healthy pus, *le pus louable*, as it used to be called, to all kinds of septic concoctions, virulent mixtures of varying degrees of malignancy, pus of pyocyanic tints (a thing I never saw in the old days, even in the dirtiest wards of the dirtiest surgeons, such as LeFort and Després), gangrenous organisms with or without *gaz*, that acme of degradation hospital rot, and the scale of the erysipelas forms of septic virulence. Vatel is said to have committed suicide because the fish did not arrive in time for his mother's banquet; what conceivable form of harakiri ought these surgeons to indulge in, in presence of this lamentable catastrophe and the utter collapse of all their wonderful *Châteaux en Espagne!*

When I say that the wounds of these unfortunate soldiers suppurate, and all suppurate, I put the matter in the most sober terms, for from a large number of these wounds, particularly the jagged, deep and irregular shell-injuries, the pus simply wells up in a steady stream. One wonders where it possibly can come from! If you leave one of these cases only twenty-four hours under a dressing, the pus will have soaked through, wormed its way out under the edges, and have soiled nightshirt, pillow, sheet and even mattress! It is something fantastic. So these wretched surgeons are practically impotent, and contemplate this revival of the sway of the pus-bug with faces of horror and consternation; all they can do is to open up widely, remove fragments, foreign bodies, and tissue that must necessarily mortify, clean the region up,—and then let the wound suppurate until it has had enough. And this is their sole occupation from early morn till dewy eve, so that their inward feelings must be of a rather hectic tinge. For, if you will consider a moment, many of these young men, who have lived chiefly in regions where accidents are not apt to occur,—that is, away from factory districts, large railroad centers, etc., —and whose practice has been in the main among the better-class civilians,—have scarcely ever seen a wound suppurate, even in the simplest manner; with modern operating-theatres, and a perfect technic, where would a surgeon's reputation be if his incision were to suppurate after an abdominal section or breast-removal! So at the present moment, if you have a surgeon friend and really wish to make him react, to see his body stiffen as the poor victims do in the Sing Sing electrocution chair, and to witness the high tension current escape from the points of his anatomy in forty cm. sparks, just ask him in an innocent way if it is true that the nurses in his ambulance have to wear indiarubber boots to keep out of the pus, or whether the authorities are really proposing to inquire into his high mortality-rate from hospital-rot!

We will now leave these filthy pigs to wallow in their blue pus and turn to our own part of the show and inquire how the medical fraternity has come out of the present ordeal.

Not so badly, on the whole. The remark was made by everybody, during the first three or four months of the war, that the morbidity was practically a negligible quantity, in comparison with the traumatisms, —that the sick-rate in the army was not any greater than, if indeed as high as, among the civilian population. In fact, you simply did not hear of any sick, only of the wounded. Of late, however, the situation has changed; but when you consider the conditions that have prevailed, the only wonder is that it is not many times worse than it is. For, remember that we have here to deal with a Latin people, none of whom stand anywhere, as compared with our Anglo-American requirements, either in personal cleanliness or habits of hygiene. Now when you think that these hundreds of thousands of men have been immobilized for well over two months in or back of lines of trenches dug in clay in a perfectly flat country only just above sea-level, with practically no drainage, while the entire region is polluted with myriads of decomposing and badly interred bodies of men and animals, and any such thing as proper scavenging is out of the question in the zone of firing, it is little short of a miracle that the various intestinal infections of a dysenterical or typhoidal variety should have remained as infrequent as they have. Two things, and two things alone, can be advanced to explain this unexpectedly favorable situation: The fact that a large number of men have been vaccinated for typhoid, and the fact that it has been midwinter, with incessant rain and no inducement to drink water. Had this situation arisen in midsummer, with endless dust, flies, and the thirsty men drinking just anywhere, we should in all likelihood have had a very different tale to tell. To those favorable factors must be added that the men have been well and intelligently fed, and that their spirits and confidence stand at *beau-fixe*,—both of these details being of prime importance as regards a man's receptivity for infectious disorders.

I imagine that when the figures come to be known it will be found that the results, as far as morbidity is concerned, will on this side of the line not bear comparison with those obtained by the Japanese in the Manchurian campaign, on account of the great difference in the hygienic customs of the two peoples: The Jap considers himself dishonored if he does not more or less boil himself in a cauldron every day of his life; whereas, if the Gaul ever washes it is because he has fallen in the river or been overtaken by a drenching rainstorm in the open. But at least, up to the present moment of writing, we have had nothing even remotely, to compare with what took place in South Africa during the first part of that war. However, we are only on the prelude of *this* war. So, perhaps, it will be wise not to give too great an air of finality to these remarks.

But a moderate amount of typhoid and dysentery is a mere nothing compared with the slough of despond of the surgical side; to be anywhere near on a footing with them we ought to have a big epidemic of typhoid, with the vermin-borne forms of typhus, spotted and recurrent, in addition; and this is precisely what we have *not* got, in spite of the fact that they say that the vermin in the fighting lines is something incredible. So far nothing has been heard of typhus, although it is indigenous in the regions from which so many of the African troops have been brought. In former days typhus generally occurred in besieged cities, prisons and famine-stricken districts. Here again the proper nourishment of the troops, together with their cheerfulness and enthusiasm, may have acted as a powerful deterrent under certainly most unfavorable general conditions.

So that it is quite fair to sum up and claim that on the whole, and taking a wide view of the entire situation, the medical side of this war has come out perhaps better than it deserved to,—a point that I may, perhaps, touch on in a future letter. The question is whether this situation is likely to continue to the end; whether when the heat comes, or if the allies begin to move over regions that have been contaminated by their adversaries for months and months, their health will remain at its present high standard. This is more than anyone can foretell; we can only wait and see.

"S."

◆

TRANSFUSION IN THE TREATMENT OF RUPTURED TUBAL PREGNANCY.

BOSTON, February 10, 1915.

Mr. Editor: Judging by the editorial in the JOURNAL of Jan. 28, 1915, in which issue my paper on "Emergencies of Extrauterine Pregnancy" was published, I fear my attitude toward blood transfusion was misunderstood. The point which I wished to emphasize especially in regard to the use of some fluid to replace the blood loss, was that the fluid should be introduced in such a manner as to be gradually absorbed. In the cases where this has been carried out, the recoveries from anemia have appeared to be more rapid. There is also a danger in the sudden introduction of a large amount of fluid into the blood vessels, as by this procedure the strain on the heart is increased and the composition of the blood changed. Where salt solution has been given intravenously, there has often been a deterioration in the appearance of the patients a day or two following operation, which did not seem to be present to such a degree in those who had gradually absorbed the fluid either from the subcutaneous tissues or from the rectum. In one or two instances the heart seemed to be affected by the increased work thrown upon it, or by the change in the blood.

In regard to blood transfusion, it was stated in my article that my experience with it in this class of cases was limited to two individuals, but that in these two cases blood transfusion showed no advantage over the use of salt solution; judging from the appearance of the patients a day or two after operation.

I am not opposed to blood transfusion as such, and the only reason it has not been used in some instances has been the lack of a donor, but in the two cases mentioned above, it seemed to me that there was a distinct indication of hemolysis. My remarks were meant to be confined to these two individuals, and not intended as a general statement, although there is a question in my mind whether the intravenous use of either blood or salt solution is always beneficent in these cases.

Very truly yours,
ERNEST B. YOUNG, M.D.
434 Marlborough Street.

◆

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE WEEK ENDING FEB. 13, 1915.

CONTRIBUTIONS.

Dr. O. O. Cooper, Hinton, W. Va.	$ 10.00
Dr. F. A. Dodge, Le Sueur, Minn.	10.00
Dr. Alfred A. Herzfeld, New York, N. Y.	10.00
Dr. A. W. Sicker, Plymouth, Wis.	5.00
Dr. Charles H. Cargile, Bentonville, Ark.	10.00
Dr. A. A. Bornscheuer, Pittsburg, Pa.	2.00
Dr. Lyn Waller Deichler, Philadelphia, Pa.	5.00
Dr. H. T. Goodwin, New York, N. Y.	5.00
Dr. Henry S. Weigle, Muncy, Pa.	5.00
Dr. James S. Keyes, Brooklyn, N. Y.	5.00
Dr. J. I. Johnston, Pittsburgh, Pa.	15.00
Dr. Frederick J. Resseguie, Saratoga Springs, N. Y.	10.00
Dr. Frank H. Jackson, Houlton, Me.	5.00
Dr. Howard L. Frost, Cleveland, Ohio	10.00
Dr. P. St. L. Moncure, Norfolk, Va.	5.00
Dr. A. J. Braden, Duluth, Minn.	5.00
Dr. Wendell C. Phillips, New York, N. Y.	75.00
Dr. Russell S. Fowler, Brooklyn, N. Y.	25.00
Dr. John W. Farlow, Boston, Mass.	25.00
Dr. E. W. Link, Palestine, Texas	10.00
Dr. H. R. Link, Palestine, Texas	5.00
Dr. H. Gifford, Omaha, Neb.	100.00
Jefferson Co. Med. Society, Birmingham, Ala.	50.00
Dr. Edgar R. McGuire, Buffalo, N. Y.	10.00
Dr. Max Einhorn, New York, N. Y.	25.00
Dr. Joseph L. Miller, Thomas, W. Va.	10.00
Dr. David Chester Brown, Danbury, Conn.	10.00
Oshkosh Medical Club, Oshkosh, Wis.	50.00
Dr. George M. Dill, Prescott, Wis.	1.00
Camden Co. Medical Society, Camden, N. J.	50.00
Dr. Joseph Walsh, Philadelphia, Pa.	10.00
Dr. L. B. Pilsbury, Lincoln, Nebr.	5.00
Dr. E. E. Montgomery, Philadelphia, Pa.	25.00
Dr. J. T. Clegg, Siloam Springs, Ark.	1.00
Dr. K. B. Huffman, Bentonville, Ark.	1.00

Receipts for week ending Feb. 13th		$ 605.00
Previously reported receipts		2528.00
Total receipts		$3133.00
Previously reported disbursements	$2530.00	
Dusbursements week ending Feb. 13, 275 boxes of food @ $2.20 per box	605.00	
Total disbursements		$3135.00
Deficit		$2.00

F. F. SIMPSON, M.D., *Treasurer.*

An American gentleman who saw the food and clothing put into the hold of the steamship, *Lynorta*, which took supplies, for the State of Virginia, to the Belgians, crossed the Atlantic on the ship and went into Belgium to watch the distribution of the articles among the people. He has returned and declares: First, that every pound of flour and every article of clothing sent from America by the Relief Commission is received by a Belgian; and second, that all who get such gifts are in direst need of them. Hunger seems to have broken down all class distinctions in Belgium.

Physicians and their families have shared the common fate. Appeals for food, drugs, and clothing are numerous and urgent. The resources of your Committee have been so limited that we have not felt justified in sending anything but food to our starving Colleagues; 156 physicians and 11 medical societies have thus far contributed to this fund. There are approximately 142,300 physicians in the United States. If each one would contribute even a small sum, it would be possible to supply the necessary food, drugs, and clothing. Do not hestitate because your check is not as large as you would like it to be. Contributions of any amount will be welcome.

Every cent you give will be economically spent for supplies for Belgian physicians and their families. There are no charges for shipping and distribution.

Not a cent has been spent for stenography, stationery, stamps, or other accessory.

◆

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE FIVE WEEKS ENDING FEB. 12, 1915.

January 18, P. A. Surgeon E. V. Valz, to Naval Hospital, Portsmouth, N. H.

January 21, Surgeon H. E. Odell, detached, Naval Hospital, Canacao, to Naval Hospital, Yokohama, Jap.

P. A. Surgeon F. E. Porter, detached, Naval Hospital, Yokohama, to U.S.S. *Cincinnati*.

A. Surgeon D. C. Post, detached, *Palos*, to *Quiros*.

A. Surgeon M. B. Hiden, detached, Naval Hospital, Canacao, to *Palos*.

Surgeon J. C. Thompson, to Navy Recruiting Station, San Diego, Cal.

Surgeon J. M. Brister, detached, *Utah*, to Atlantic Reserve Fleet.

Surgeon J. F. Murphy, detached, *Montana*, to home and wait orders.

Surgeon H. D. Wilson, to *Utah*.

Surgeon M. K. Johnson, to *Montana*.

Surgeon F. E. McCullough, detached, Naval Training Station, Newport, to Naval Training Station, San Francisco.

Surgeon D. N. Carpenter, detached Bureau of Medicine and Surgery, to Naval Training Station, Newport.

January 22, P. A. Surgeon F. G. Abeken, detached, Naval Station, Guam, to U.S.S. *Supply*.

A. Surgeon G. W. Calver, detached, *Supply*, to Naval Station, Guam.

January 28, P. A. Surgeon M. C. Baker, to Naval Station, New Orleans, La.

February 1, A. Surgeon Louis Lehrfeld, Resignation accepted effective January 29, 1915.

February 4, P. A. Surgeon C. M. George, detached, Pacific Torpedo Flotilla, to home and wait orders.

February 5, A. Surgeon H. V. Cornett, to Naval Hospital, Canacao.

P. A. Surgeon Wm. Chambers, to Naval Station, Olongapo.

A. Surgeon L. H. Roddis, to Naval Hospital, Canacao.

February 6, Surgeon J. C. Pryor, detached, *North Dakota*, to *Montana*, connection, Regiment Marines.

P. A. Surgeon L. M. Schmidt, detached, *Louisiana*, to *Montana*, connection, Regiment Marines.

February 9, P. A. Surgeon J. G. Ziegler, detached, *West Virginia*, to Pacific Torpedo Flotilla.

February 11, Surgeon W. S. Hoen, detached, Pacific Reserve Fleet, to *Colorado*.

APPOINTMENTS.

It is announced that *Dr. S. H. Chuan*, a graduate of Harvard University, has been appointed Surgeon-General of the Chinese Empire and elected president of the Chinese Army Medical college at Tien-tsin.

Dr. George Lovell Gulland, M.A., B.Sc., F.R.C.P.E., has been appointed professor of medicine in the University of Edinburgh.

Dr. J. A. Murray has been appointed acting director of the British Imperial Cancer Research Fund, succeeding Dr. Bashford who has recently resigned on account of ill health.

The officers of the various sections of the New York Academy of Medicine for the year 1915 are as follows: Dermatology and syphilis, *Dr. Charles M. Williams*, chairman, *Dr. Walter J. Heimann*, secretary; surgery, *Dr. Clarence A. McWilliams*, chairman, *Dr. John Douglas*, secretary; neurology and psychiatry, *Dr. Israel Strauss*, chairman. *Dr. Foster Kennedy*, secretary; pediatrics, *Dr. Walter L. Carr*, chairman, *Dr. Royal S. Haynes*, secretary; otology, *Dr. C. D. Van Wagenen*, chairman, *Dr. John A. Robinson*, secretary; ophthalmology, *Dr. H. H. Tyson*, chairman, *Dr. George H. Bell*, secretary; medicine, *Dr. T. Stuart Hart*, chairman, *Dr. Nellis B. Foster*, secretary; genito-urinary diseases, *Dr. Leo Buerger*, chairman, *Dr. A. R. Stevens*, secretary; orthopedic surgery, *Dr. Arthur H. Cilley*, chairman, *Dr. P. W. Roberts*, secretary; obstetrics and gynecology, *Dr. LeRoy Brown*, chairman, *Dr. George W. Kosmak*, secretary; laryngology and rhinology, *Dr. Hubert Arrowsmith*, chairman, *Dr. Francis W. White*, secretary.

RESIGNATON.

Dr. William H. Park, director of laboratories of the New York Department of Health has resigned his administrative position as dean of the New York University Medical College, but will continue there as professor of bacteriology and hygiene.

NOTICES.

Physicians visiting the city will be cordially welcomed at the following clinics on the days and hours specified.

Boston City Hospital.—After January 1, 1915, public operations will be performed in the Surgical Amphitheatre each week, on Thursdays, Fridays and Saturdays, at 10 o'clock.

Thursday: First Surgical Service. Dr. Blake.

Friday: Third Surgical Service. Dr. Nichols, and Fourth Surgical (G-U) Service. Dr Thorndike.

Saturday: Second Surgical Service. Dr. Lund.

Carney Hospital.—Dr. Bottomley and Dr. Mahoney will hold an operative surgical clinic every Wednesday at 9 A.M., and at the same hour on the same day Dr. W. R. MacAusland will hold an orthopedic clinic. All physicians are welcome to attend.

Massachusetts General Hospital.—1. A surgical clinic Tuesday, at 12, in the out-patient amphitheatre. 2. Operations in the Bigelow amphitheatre Saturdays from 10 to 1. 3. Operations in the Surgical Building except Sunday, from 9 to 1. 4. Daily surgical ward visits at which visiting physicians will be welcome. 5. Clinic in medicine and pathology Tuesdays at 12, by Drs. R. C. and H. Cabot and O. Richardson. 6. Medical clinic Thursday at 12, by Dr. D. L. Edsall.

Peter Bent Brigham Hospital.—Physicians visiting the city will always be cordially welcomed at the Peter Bent Brigham Hospital.

The medical visit takes place regularly every morning beginning at 10 o'clock.

Operations are usually going on throughout the forenoon in the surgical amphitheatre.

The surgical clinic is held in the clinical amphitheatre on Wednesdays at 12.30 P.M.

The medical clinic is held in the clinical amphitheatre on Mondays at 12.30 P.M.

The clinico-pathological demonstration is held in the clinical amphitheatre on Fridays at 3.30 P.M.

Massachusetts General Hospital. — A medical meeting, open to the medical profession, will be held at 12 noon on Monday, March 1, 1915, in the lower amphitheatre of the out-patient department. Entrance on Fruit street. 1. Exhibition of cases. 2. Dr. J. H. Wright. A study of the inhibitory action of syphilitic serum on the formation of thrombin as compared with the Wassermann test. 3. Dr. G. C. Shattuck. A study of percussion dullness and the cardiac border. 4. Dr. J. H. Means and H. L. Higgins. The effect of drugs upon respiration in health.

F. A. Washburn, M. D., *Resident Physician*.

SOCIETY NOTES.

New England Pediatric Society.—The thirty-sixth meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, February 26, 1915, at 8.15 P.M.

1. "Typhoid Fever in Children," Dr. Karlton G. Percy, Boston.
2. "Homogenized Milk. Its Possible Uses in Infant Feeding." Dr. Maynard Ladd, Boston.
3. Luetic Bursopathy of Verneuil. Report of a Case. Congenital Type," Dr. William P. Coues, Boston.
4. "Some New Symptoms in Amaurotic Family Idiocy," Dr. Isador E. Coriat, Boston.

Light refreshments will be served after the meeting.

E. M. Buckingham, M.D., *Pres.*
Richard M. Smith, M.D., *Sec'y.*

The Harvey Society.—The ninth lecture of the series will be given at the New York Academy of Medicine, 17 West 43rd street, on Saturday evening, February 27th, at 8.30 P.M., by Prof. R. R. Bensley, University of Chicago. Subject. "Structure and Relationship of the Islets af Langerhans and Criteria of Histological Control in Experiments on the Pancreas."

BOOKS AND PAMPHLETS RECEIVED.

Speculation on the Stock Exchanges and Public Regulation of the Exchanges. An address delivered before the American Economic Association at Princeton, N. J., December 29, 1914.

The Story of Bethlehem Hospital from Its Foundation in 1247. E. G. O'Donoghue. E. P. Dutton & Company, 1915.

Morris's Human Anatomy, edited by C. M. Jackson, M.D. Fifth edition. P. Blakiston's Son & Co. 1915.

The Diagnostics and Treatment of Tropical Diseases, by E. R. Stitt, M.D. P. Blakiston's Son & Co.

Selected Addresses on Subjects Relating to Education, Biography, Travel, etc., by James Tyson, M.D. P. Blakiston's Son & Co.

The Balneo-Gymnastic Treatment of Chronic Diseases of the Heart, by Professor Theodor Schott, M.D. P. Blakiston's Son & Co.

IMPORTANT ANNOUNCEMENT

LIQUID ALBOLENE

We regret to say that supplies of Russian oil, from which LIQUID ALBOLENE is refined, are no longer obtainable, owing to the European war.

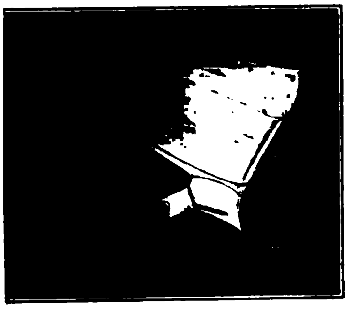
As soon as present stocks are exhausted LIQUID ALBOLENE will be out of the market.

To avoid inconvenience to physicians we have prepared an "American Liquid Petrolatum," which we are offering as a temporary product to take the place of LIQUID ALBOLENE until such time as we are again able to secure supplies of Russian oil.

American Liquid Petrolatum is of different chemical composition from LIQUID ALBOLENE, is of slightly less gravity and viscosity, and is less resistant to mineral acids. Limited supplies only are being refined, and we urge physicians to be careful to specify LIQUID PETROLATUM, AMERICAN, McK. & R., in order to secure the best preparation to be had during the war, or until LIQUID ALBOLENE is again procurable.

Two Varieties—PLAIN and AROMATIC

McKESSON & ROBBINS, 91-97 Fulton St., NEW YORK



THE STORM BINDER AND ABDOMINAL SUPPORTER

(PATENTED)

Adapted to use of Men, Women Children and Babies

Modifications for Hernia, Relaxed Sacro-iliac Articulations, Floating Kidney, High and Low Operations, Ptosis, Obesity, Pregnancy, Pertussis, etc.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours

KATHERINE L. STORM, M.D., 1541 Diamond Street, **Philadelphia**

NEW YORK

FACING CENTRAL PARK

Hotel San Remo

74th and 75th Streets

One of the most attractively located hotels in New York, commanding an extensive view of Central Park. Within 15 minutes of everything worth while.

Handsome suites and rooms with bath, at reasonable rates. Special term rates to permanent guests.

Restaurant a la carte
also
Table d'hote dinner served

INDEX TO ADVERTISEMENTS

American Engraving Co. xviii
Armour & Co. xx
Boston Hygienic Corset Co. ii
Boston Laboratories xiv
Chandler's Corset Store xii
Devine, Gibbs & York xviii
Eastman Kodak Co. vi
Fisk & Arnold Artificial Limbs xiii
French Lick Springs Pluto Water iv
Harvard Dental School xiv
Harvard Medical School xiv
H.-O. Oatmeal v
Hotel San Remo xix
International Instrument Co. xiii
Jefferson Medical College Philadelphia xiv
Journal Advertisers xii
King's Puremalt vii
Mahady, E. F. Co. ii
Massachusetts General Hospital xv
McKesson & Robbins xix
Medical School of Maine xv
Medico-Chirurgical College xiv
Merck & Co. xviii
Mulford, H. K. Co. Chemists xi
New York Eye and Ear Infirmary xv
New York Polyclinic Medical School xiv
New York University xv
Nurses' Directory vi
Parke, Davis & Co. v
Pomeroy xx
Professional Cards xvi and xvii
Quaker Oats Co. xiii
Royal Baking Powder iii
Saunders, W. B. Co. Publishers i
Senders, Henry H. xviii
Sharp & Dohme Chemists vii
Sherman's Bacterins iv
Storm Binder xix
Syracuse University xiv
Thomas, F. H., Co. ix
Tufts College Medical School xv
Warren Chambers xviii

ARMOUR AND COMPANY
CHICAGO

To Doctors and Druggists:

SOME of the most valuable medicines are of animal origin. Pepsin, Pancreatin, Thyroids, Pituitary Liquid, Corpus Luteum, Red Bone Marrow, etc., are made from materials supplied by abattoirs.

All glands and membranes used in manufacturing medicines should be perfectly fresh and normal. All animals from which glands and membranes are taken should be healthy. Armour and Company are in position to guarantee the condition of all raw material used in making their therapeutic products and the health of the animals from which this raw material is taken.

Every cow, pig and sheep killed by Armour and Company is inspected by the U. S. Government, and every gland is selected with rigorous care. All raw material is put into process before it has had opportunity to deteriorate, and all finished preparations are analyzed and made to conform to the most reliable standards.

Armour's facilities for manufacturing organo-therapeutic agents are unequaled anywhere, and we believe it is to the interest of Physicians and Pharmacists and their clientele to specify **Armour's** when any remedy of animal origin is required. Literature on request.

ARMOUR AND COMPANY, Chicago

POMEROY
FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY
41 WEST STREET, BOSTON

THE BOSTON Medical and Surgical JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 9

THURSDAY, MARCH 4, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

THE CARNIVOROUS AND HERBIVOROUS TYPES IN MAN. *By John Bryant, M.D.*, Boston.

THE ROENTGEN DIAGNOSIS OF GALL-STONES BY IMPROVED METHODS. *By Lewis G. Cole, M.D.*, New York, and *Arial W. George, M.D.*, Boston.

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. *By Torr W. Harmer, M.D.*, Boston.

A STUDY OF DISTURBANCES OF THE STOMACH. *By H. F. Hewes, M.D.*, Boston.

EDITORIALS

THE CLASSIFICATION AND DIAGNOSIS OF DIARRHEA IN BOTTLE-FED INFANTS.

CARNIVOROUS AND HERBIVOROUS TYPES IN HUMAN EVOLUTION.

OPERATION OF THE HARRISON BILL.

PROMPT USE OF DIPHTHERIA ANTI-TOXIN.

THE FAILURE OF AN IMPORTANT BILL.

MEDICAL SCHOOL NUMBER OF THE HARVARD ALUMNI BULLETIN.

For complete table of contents, see first text page.

SEVENTH EDITION

Scudder's Treatment of Fractures

The success of Dr. Scudder's fracture book is due to one feature: It not only *tells* you definitely how to treat fractures, but it *shows* you how by the use of good, clear pictures, with legends that point out to you those little details of technic which mean success—which mean *good results*.

While the work is called *treatment* of fractures, *diagnosis*, of course, is given great prominence, as proper treatment can be instituted only after correct diagnosis. It is a work on fractures designed for the general practitioner—the man in active practice—and, therefore, confines itself principally to the practical sides of the subject—diagnosis and treatment.

Into this edition, enlarged by 100 pages and 125 illustrations, Dr. Scudder has introduced a chapter on the *operative treatment* of fractures, and other material not in previous editions, specially matter in connection with fractures of the skull, spine, and neck of the femur; old fractures of the nasal bones and lower end of the tibia; excision of the shoulder-joint; damage to the lower tibial epiphysis, etc.

Octavo of 708 pages, with 994 illustrations. By CHARLES L. SCUDDER, M.D., Surgeon to the Massachusetts General Hospital, Boston. Polished Buckram, $6.00 net; Half Morocco, $7.50 net.

Scudder's Tumors of the Jaw

"It can be heartily recommended to the general practitioner and the surgeon. The diagnostic points and differential diagnosis between the various conditions are clear. The plates illustrating operative procedures are made to show the different stages in a very distinct manner."—*Canadian Medical Journal.*

Octavo of 395 pages, with 358 illustrations, 6 in colors. By CHARLES L. SCUDDER, M.D., Surgeon to the Massachusetts General Hospital, Boston. Cloth, $6.00 net; Half Morocco, $7.50 net.

W. B. SAUNDERS COMPANY West Washington Square, Philadelphia

Entered at the Post-office at Boston as second-class matter

HYGIENIC FRONT-LACED CORSETS

* * *

Beneficial in all forms
of visceral ptosis and
in sacro-iliac strain

* * *

THE BOSTON HYGIENIC CORSET COMPANY
59 TEMPLE PLACE, 'Phone Oxford 4131

E. F. M.
Liquid Paraffin

Is so pure that aromatics are not required to cover up the disagreeable odor or taste which is found in most of the so-called Paraffin Oils on the market.

Our Russian Oil maintains a perfect control of the bowels without irritation, its action being purely mechanical without purgative principles.

It is extremely useful in surgical and obstetrical practice.

We are the sole importers of the genuine Lane Oil.

Samples free to Hospitals and Physicians.

Write for Prices.

E. F. MAHADY CO.
Surgical and Hospital Supplies
673 Boylston Street, Boston, Mass.

Current Literature

THE JOURNAL OF EXPERIMENTAL MEDICINE.

FEBRUARY 1, 1915.

1. SMYTH, H. F. *The Reactions Between Bacteria and Animal Tissues Under Condition of Artificial Cultivation.*
2. *DOCHEZ, A. R., AND AVERY, O. T. *Varieties of Pneumococcus and Their Relation to Lobar Pneumonia.*
3. AVERY, O. T. *The Distribution of the Immune Bodies Occurring in Antipneumococcus Serum.*
4. *LYALL, H. W. *The Types of Pneumococci in Tuberculous Sputum.*
5. FLEISCHER, M. S. AND LOEB, L. *Further Investigations on the Mode of Action of Substances Inhibiting Tumor Growth and on Immunization against these Substances.*
6. HESSELBERG, C. *A Comparison of Autoplastic and Homeoplastic Transplantation of Thyroid Tissue in the Guinea Pig.*
7. CORPER, H. J. *Notes on the Subcutaneous Absorption and a Quantitative Estimation of Cholesterol.*
8. GRAHAM, E. A. *The Resistance of Pups to Late Chloroform Poisoning in its Relation to Liver Glycogen.*

6. Dochez and Avery have studied further the varieties of the pneumococcus. In their classification of pneumococci there are three groups which are closely related by immunological reactions. The fourth is made up of the other varieties. This fourth group seems to be of low virulence and in their experience is responsible for only 20% of the cases of lobar pneumonia. They found that the pneumococci from the mouths of normal individuals in every instance belong to this fourth group. They found, furthermore, that during convalescence from lobar pneumonia caused by pneumococci belonging to the first three groups, that the original organisms were supplanted by pneumococci of the fourth group, that is, by those that are found in normal mouths. The obvious deduction from their study is that the large majority of cases of pneumonia are dependent upon either direct or indirect contact with a previous case and that lobar pneumonia is not usually caused by the invasion of the lungs by a pneumococcus habitually carried in the mouth as has been the general belief.

4. Lyall studied the pneumococci isolated from 20 out of 50 cases. Forty-three of these 50 cases were positively tuberculosis. He found that the pneumococci belonged to the fourth group in 15 of the 20, or 75%, in the third group (the pneumococcus-mucosus) in 3, or 15% and in group one, in 2, or 10%. This study further substantiates the previous observations that pneumococci of the so-called fixed types, especially those of groups one and two, occur with great infrequency except in active lobar pneumonia.

[R. I. L.]

THE LANCET.

JANUARY 9, 1915.

1. GRIFFITH, T. W. *Remarks on a Communication Between the Two Ventricles of the Heart Occupying an Unusual Situation.* (*Illustrated.*)
2. *MORLEY, J. *Some Conditions That Simulate Chronic Appendicitis.* (*Illustrated.*)
3. MALCOLM, J. J. *Pneumoperitoneum of Three Days' Duration Following Resection of a Carcinomatous Rectum; Evacuation of the Gas and of a*

(*Continued on page iv.*)

COLLEGE LIBRARY
1915

The Boston Medical and Surgical Journal

Table of Contents

March 4, 1915

ORIGINAL ARTICLES.

THE CARNIVOROUS AND HERBIVOROUS TYPES IN MAN. *By John Bryant, M.D.*, Boston. 321
THE ROENTGEN DIAGNOSIS OF GALL-STONES BY IMPROVED METHODS. *By Lewis Gregory Cole, M.D.*, New York, and *Arial W. George, M.D.*, Boston. 326
A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. A CRITICAL ANALYSIS OF 134 MICROSCOPICALLY PROVEN CASES. *By Torr Wagner Harmer, M.D.*, Boston. (Continued.) 331
A STUDY OF DISTURBANCES OF THE STOMACH. *By H. F. Hewes, M.D.*, Boston. (Continued) 338

REPORTS OF SOCIETIES.

CLINICAL CONFERENCE OF THE NEUROLOGICAL INSTITUTE, NEW YORK. MEETING OF JANUARY 21, 1915. 341

BOOK REVIEWS.

Fever—Its Thermotaxis and Metabolism. By Isaac Ott, M.D. . . . 344
Practical Therapeutics. By Hobart Amory Hare, M.D. 344
On Dreams. By Prof. Sigmund Freud. 344
Lead Poisoning. By Sir Thomas Oliver, M.D. 344

EDITORIALS.

THE CLASSIFICATION AND DIAGNOSIS OF DIARRHEA IN BOTTLE-FED INFANTS. 345
CARNIVOROUS AND HERBIVOROUS TYPES IN HUMAN EVOLUTION. . . . 346
OPERATION OF THE HARRISON BILL. 347
PROMPT USE OF DIPHTHERIA ANTI-TOXIN. 348
THE FAILURE OF AN IMPORTANT BILL. 348
MEDICAL SCHOOL NUMBER OF THE HARVARD ALUMNI BULLETIN. . 349
MEDICAL NOTES 349

CORRESPONDENCE.

THE TREATMENT OF DRUNKARDS WHO BECOME PUBLIC CHARGES. *George W. Gay, M.D.* 855
A MISAPPREHENSION CORRECTED. *Vincent Y. Bowditch, M.D.* . . . 855

MISCELLANY.

SANITARY CONDITIONS AT THE BOSTON IMMIGRATION STATION. . . . 853
MEMORIAL RESOLUTIONS. 854
BELGIAN PHYSICIANS' RELIEF FUND. 856
NOTICES, APPOINTMENTS, RESIGNATIONS, RECENT DEATHS, BOOKS AND PAMPHLETS RECEIVED. 856

Original Articles.

THE CARNIVOROUS AND HERBIVOROUS TYPES IN MAN:

THE POSSIBILITY AND UTILITY OF THEIR RECOGNITION.*

I. INTRODUCTION AND OUTLINE.

BY JOHN BRYANT, M.D., BOSTON.

IN a previous paper,[1] some account was given of the general considerations which led to the present studies, together with methods and the amount of work done upon the subject suggested by the above title. At about the same time, May, 1914, a bibliography[2] was presented, which in a broad way covered the various aspects of the literature. The time now devoted to the problem has been extended to about three years. A total of some five hundred post-mortems have been observed in this period, chiefly in Berlin and Hamburg, upon which it is expected to make some detailed remarks when the present series of papers has been concluded. In addition to the pathological work, many patients have been seen in the hospitals here and abroad, and much valuable information has been gained through conversations with numerous able American and European clinicians.

On the basis of this preparation, there has been constructed the provisional outline which follows. It is by no means to be considered as final, but it at least provides a method of classification open to proof, and it is felt that it can be corrected and amplified until it has become of distinct value as an aid to clinical medicine, from the point of view not only of diagnosis and treatment, but of prognosis and, still more important, of prevention.

There are of course innumerable ways of classifying the human race. Some one has divided it into those in pursuit of truth and those in pursuit of happiness. Bean has suggested a logical and scientific classification upon the basis of the three germ layers, but this involves three divisions. Can the human race for descriptive purposes be split into two contrasting halves? With his usual perspicacity, the common man has settled the question in the way most obvious to him by employing the terms thin and fat, as witness such nursery rhymes as "Jack Spratt and his wife." It will be shown that this is a sound classification, since it is an outward manifestation of structural differences grouped in the present work under the heading of type: carnivorous and herbivorous. It would be manifestly absurd to claim any originality for the use of these two words. They have been used for scores, almost hundreds, of years as the basis of a broad classification of the lower animals, and Treves and many other workers both before and after him have pointed out that from a developmental point of view man lies midway in the scale between these two extremes; but there the matter has rested.

It is now proposed to apply this old comparative anatomy classification to the genus homo, and to attempt to show not only the logic of its application, but the extent to which it may be made useful: herein lies whatever of originality there may be in the present studies: but credit for originality is beside the point, for the only question at issue, upon which it is hoped to stimulate discussion is the following: Is the classification here presented of value to clinical medicine?

---

* Being Contributions from the Psychopathic Hospital Number 66 (1915.3). The article was presented in abstract at a meeting of State Hospital physicians and others held at the Psychopathic Hospital, January 4, 1915. (*Bibliographical Note.*—The previous contribution, Number 65 (1915.2), was by Robert M. Yerkes, entitled "The Importance of Social Status as Indicated by the Results of the Point Scale Method of Measuring Mental Capacity," submitted to the *Journal of Educational Psychology.*)

Among the facts in comparative anatomy which may be taken as proved by work recorded by others in the literature, may be mentioned the following:

1. Body form influences intestinal length, regardless of food habits.
2. Intestinal length varies with the species, regardless of food habits.
3. In a given species intestinal length may vary 100%.
4. This variation depends chiefly upon the digestibility of the food.
5. Offspring of one mother have at birth approximately the same intestinal length.
6. In a given adult individual of one species body form and intestinal length are dependent chiefly upon heredity, the form or digestibility of the food presented during the growing period, and the general habits of life. Sex plays an almost negligible part in this regard.
7. The carnivorous or herbivorous habit is not obligatory. Animals predisposed by their species to one or the other of these extremes of food habit, may within wide limits when forced by necessity reverse their normal manner of life, being thus as it were facultatively carnivorous or the reverse. For example, the polar bear may be forced to live upon kelp, and the cow may exist in comparative comfort upon fish.
8. In the group of mammals, the carnivora are distinguished by a long thin body form, and a short simple type of intestine in which the small intestine is markedly longer than the colon. The herbivora, on the other hand, present a marked contrast; the body form is short and thick, and the intestine long and complex, with the small intestine perhaps barely equal in length to the colon.

In man, the intestine is of intermediate character, nearer to the carnivora than to the herbivora, but here also one finds extremes of difference in intestinal length amounting as in the lower animals to at least 100% at a given age or height.

If now one attempts to divide the genus homo itself into the two groups of herbivorous and carnivorous, the contrast is more striking when the group "omnivorous" is omitted, and since it is merely a combination, always in varying proportions, of the other two factors, its use is confusing. An additional reason for omitting "omnivorous" from a medical classification is that man is normally omnivorous, and the normal man is usually healthy. Medicine is concerned chiefly with the abnormal, the "sports" of development. Much of our progress is doubtless due to these same sports, but to them the ordinary life and ordinary food of the normal man are ill adapted. They require special care for maximum efficiency, and since food is the chief essential to life, the regulation of the diet in these sports becomes a matter of considerable moment. The direction of the change in these cases is usually away from the ordinary or mixed diet, and in the direction of a predominatingly meat or vegetable diet, according to the indications of one or the other type suggested by the body form. The extremes of these types in man present almost as great contrasts as do the tiger and the hippopotamus in the jungle and the zoölogical garden.

If one could go no further than to say that type is proven in the lower animals and that it is susceptible of proof in man, the whole proposition would remain as a museum curiosity. If, however, it can be applied to clinical medicine, it must remain a live issue. It would, for instance, be worth while if it could be shown that by mere observation, before using instruments of precision, one could state even approximately that a given patient has probably had or is likely to have had certain diseases and not others, that his present complaints are so and so, and that in the future this person will be subject to say high blood pressure hypertrophic arthritis or gall-stones, and that person to tuberculosis, atrophic arthritis, or leukaemia. That some at least of these diagnoses and prognoses are possible is suggested by the contents of the following differential tables, and it is hoped that they may prove of interest not only to the physician, but to the employer of labor, and to the life insurance actuaries who must deal so largely, so to speak, in futures.

The tables which follow are arranged, in default of a better method, in alphabetical order, and are intended to bring out the contrasts between the two types in question; therefore they are presented at first with a minimum of reading matter, and will be followed in later issues of this Journal by papers dealing at more length with their contents when repetition will be much less obvious. It is perhaps sufficient for the present to point out two general principles.

The first may be called the law of contrasts, for it seems that where one can prove a given point for one type, its opposite may be expected to prove true in the other type. So-called normal anatomy seems to have been based chiefly upon the herbivorous type. The consideration of the numerous mixed types is purposely omitted from this paper.

The second general principle is, that in a broad way the herbivore would appear from a study of the tables as a positive and the carnivore as a negative organism. The carnivore in short may be regarded either as an inferior or as a very highly specialized organism, for in him the only systems developed or remaining present in excess, are those necessary to the perpetuation of the species: the central nervous system, and the reproductive system. In this connection, it is perhaps worthy of remark that the majority of persons who had reached advanced age before appearing in the series of autopsies referred to, seemed to be decidedly of the carnivorous type. Extremes in variation of organs, appear also to occur often within the limits of this type.

References to the literature will be given in the later consideration of the tables, but only in cases of special interest, or when sources have not already been indicated in the two papers previously mentioned. Statements for which no other authority is to be found, may be considered as based upon personal observations.

---

[1] Bryant: Boston Med. and Surg. Jour., 1914, Vol. clxx, p. 795.

[2] Bryant: Internat. Abstract of Surg., May, 1914, (As printed this article contained many errors. Corrected reprints have been sent to most of the larger medical libraries.)

Table I.

HERBIVOROUS.		BILIARY.		CARNIVOROUS.
Amount secreted, large............	Plus	..... BILE	Minus	Less abundant
Passes through liver to bile........	Plus	CHOLESTERIN*	Minus	Retained in circulation by liver acting as a filter. Amount in bile small.
With liver large...............	Plus	.. CIRRHOSIS ..	Plus	With liver small.
Muscular, small, thick.............	Minus	GALL BLADDER	Plus	Atrophic, large, thin, ptotic.
Present in relatively small amounts	Minus	GLYCOCHOLIC ..... ACID* ..... (Contains no sulphur)	Plus	(C_{26} H_{43} NO_6).
Large, high, transverse............	Plus	..... LIVER	Minus	Small, low, perpendicular.
May be pure cholesterin...........	Plus	. GALL-STONES .	Plus	Stones, if present, always of infectious origin.
(C_{26} H_{45} NO_7 S)....................	Plus	TAUROCHOLIC ..... ACID* ..... (Contains sulphur)	Minus	Present in relatively small amounts.

* Facts true for the lower animals.

Table II.

HERBIVOROUS.		CARDIO-RENAL.		CARNIVOROUS.
Cholesterin deposits in retina......	Plus	ALBUMINURIC .. RETINITIS ..	Minus	
Large	Plus	.... AORTA	Minus	Small.
Apoplexy	Plus	ARTERIO- .. SCLEROSIS ..	Minus	
	Plus	... ASCITES ...	Minus	Cardio-renal disease less frequent.
May be extremely high............	Plus	BLOOD PRESSURE	Minus	Usually low.
Blood content high...............	Plus	CHOLESTERIN	Minus	Blood content lower.
High	Plus	. DIAPHRAGM .	Minus	Low.
	Minus	EOSINOPHILES	Plus	Often +
Large, transverse	Plus	.... HEART	Minus	Small, perpendicular.
	Minus	.. LEUKEMIA ..	Plus	Usually in this type.
	Minus	LYMPHOCYTES	Plus	Usually +
Large, high	Plus	.... KIDNEY	Minus	Small, low.
High tension, fast, full............	Plus	.... PULSE	Minus	Low tension, slow, weak.
Hemoglobin and count high........	Plus	RED BLOOD . CORPUSCLES .	Minus	Hemoglobin and count low.
	Minus	STATUS-LYMPHATICUS	Plus	Always of this type.

Table III.

HERBIVOROUS.		CHEMICAL.*		CARNIVOROUS.
Easily fatal. No formation of NH_4 from proteids..................	Plus	... ACIDOSIS ...	Minus	Not easily fatal. NH_4 formed in considerable amounts.
In urine +.......................	Plus	... CALCIUM ...	Minus	Usually only small amounts.
Percent. in blood and supra-renal high	Plus	CHOLESTERIN	Minus	Percent. in blood and supra-renal low.
Large, light, acid, fermentative....	Plus	.... FAECES	Minus	Small, dark, alkaline, putrefactive.
Relatively small amounts in bile...	Minus	GLYCOCHOLIC ..... ACID ..... (C_{26} H_{43} NO_6)	Plus	Large amounts in bile.
In urine +.......................	Plus	HIPPURIC ..... ACID	Minus	Usually absent in urine.
Usually absent in urine...........	Minus	... INDOXYL ...	Plus	In urine often in large amounts.
Formed only from dextrose........	Minus	... LACTOSE ...	Plus	Formed from proteid also if necessary.
Decreasing with length of fast.....	Minus	NITROGEN ELIMINATION	Plus	Constant during fast.
Usually small amounts only........	Minus	PHOSPHATES	Plus	In urine +
In bile +........................	Plus	TAUROCHOLIC ..... ACID ..... (C_{26} H_{45} NO_7 S)	Minus	Relatively small amounts in bile.
Usually small amounts only........	Minus	..... UREA	Plus	In urine +
Always present but in traces only..	Minus	.. URIC ACID ..	Plus	Amount varies with diet: may be high or absent.
Normally alkaline or neutral.......	Minus	.... URINE	Plus	Normally acid.
Not limited......................	Plus	URINARY ACIDITY	Minus	Limited.

* Known to be true in the lower animals, and probably true in human types.

Table IV.

HERBIVOROUS.		DUCTLESS GLANDS.		CARNIVOROUS.
Small	Minus	GENITAL	Plus	Large, reproductive functions +
May be large or cystic: adiposis, gigantism, acromegaly	Plus	HYPOPHYSIS	Minus	Variations slight.
Usually large	Plus	PANCREAS	Minus	Usually small.
Calcium balance normal	Plus	PARA-THYROID	Minus	Tetany not infrequent.
Normal or large	Plus	THYMUS	Minus	Usually deficient, may be very large.
Myxoedema	Minus	THYROID	Plus	Exophthalmic goitre.
Always large, especially cortex	Plus	SUPRA-RENAL	Minus	Always small, vagotony frequent.

Table V.

HERBIVOROUS.		DIGESTIVE.		CARNIVOROUS.
Usually of acquired type, especially in region of gall bladder	Plus	ADHESIONS	Plus	Largely congenital as veils, also flexure adhesions frequent.
Small at base, short, tubular	Minus	APPENDIX	Plus	Large at base, long, conical.
Usually fulminating, often fatal	Plus	APPENDICITIS	Plus	Usually chronic and mild.
Long, large, high	Plus	COLON	Minus	Short, small, low.
Atonic; sympathetic stimulation in excess causes decreased peristalsis	Plus	CONSTIPATION	Plus	Spastic; vagus stimulation in excess causes increased peristalsis.
Rare	Minus	DUODENAL ULCER	Plus	Frequent.
Rare	Minus	GASTRIC ULCER	Plus	Frequent.
Normal	Minus	HEPATIC FLEXURE	Plus	High or absent.
Normal position, firmly attached	Minus	ILEO-CAECAL VALVE	Plus	High or low, loosely attached.
Muscular, long, thick walled	Plus	INTESTINE	Minus	Short, thin walled.
Infrequent, acquired	Minus	PTOSES	Plus	Frequent, congenital.
May be as 1 : 1	Plus	RATIO, COLON TO SMALL INTESTINE	Minus	Often at 1 : 5, never as 1 : 1.
Usually short	Minus	SIGMOID LOOP	Plus	Usually long, may reach to diaphragm.
Normal	Minus	SPLENIC FLEXURE	Plus	Often high, rarely very low.
Normal, transverse	Minus	STOMACH	Plus	Tubular, long or dilated, often low.
Sympatheticotony its antithesis	Minus	VAGOTONY	Plus	Always in this type.

Table VI.

HERBIVOROUS.		DIET.		CARNIVOROUS.
Normal diet	Plus	CARBOHYDRATES	Minus	Easily cause gas formation.
Normally acid, fermentative, large.	Plus	FAECES	Minus	Normally alkaline, putrefactive, small.
Normal diet	Plus	FATS	Minus	Easily cause fat indigestion.
Easily taken in excess	Minus	PROTEIDS	Plus	Normal diet.

Table VII.

		EYE.		
Visible cholesterin deposits	Plus	ALBUMINURIC RETINITIS	Minus	
Visible cholesterin deposit	Plus	ARCUS SENILIS.	Minus	
	Minus	ASTHENOPIA	Plus	With general asthenia.
Cholesterin a factor?	Plus	CATARACT	Minus	
Pupil large	Plus	CILIARY MUSCLE	Minus	Pupil small.
	Minus	CONGESTIONS	Plus	Due to poor circulation?
Iris angle wide, lymph flow not obstructed	Minus	GLAUCOMA	Plus	Lymph outflow easily obstructed.
	Minus	HYPEROPIA	Plus	Low blood pressure.
Nose wide, flat	Plus	INTER-OCULAR DISTANCE	Minus	Nose thin, prominent.
High blood pressure	Plus	MYOPIA	Minus	
Cholesterin a factor?	Plus	OPACITIES	Minus	
External	Plus	SQUINT	Plus	Internal.
Visible cholesterin deposits	Plus	XANTHOMA	Minus	

Table VIII.

HERBIVOROUS.		HABITS AND DISEASES.		CARNIVOROUS.
Light wine or beer with low alcohol content, if alcohol is used at all	Minus	ALCOHOL	Plus	Brandy or whiskey and other distilled liquors with high alcohol content preferred.
	Minus	DRUGS	Plus	As morphia and cocaine.
Starches, greens, vegetables	Plus	FOOD	Plus	Meats, greens, no starches.
Prefers sugar to alcohol	Plus	SUGAR	Minus	Prefers alcohol to sugar.

Table VIII. (*Continued.*)

HERBIVOROUS.		HABITS AND DISEASES.		CARNIVOROUS.
Infrequent, acute, severe, more often fatal	Plus	INFECTIONS	Plus	Frequent, chronic, mild, seldom fatal.
Ulcer and gumma	Plus	SYPHILIS	Plus	General paresis and tabes.
Cardio-renal and mesenchymal tissues	Plus	SYSTEMIC	Plus	Central nervous system, gastro-intestinal tract, skin, or other epithelial structures.
	Minus	TUBERCULOSIS	Plus	Pulmonary, in over 90% of cases occurs in this type.

Table IX.

HERBIVOROUS.		LYMPHATIC.		CARNIVOROUS.
	Minus	GLANDS	Plus	Frequently enlarged.
	Minus	LEUKAEMIA	Plus	Usually in this type.
Normal	Minus	SPLEEN	Plus	Small or large.
Small	Minus	TONSILS	Plus	Often large.

Table X.

HERBIVOROUS.		MENTAL.		CARNIVOROUS.
Sytemic changes, slow onset, usually quiet	Minus	DISEASES	Plus	Acute onset, sudden psychoses, often violent.
Deductive, slow, persistent	Minus	MENTALITY	Plus	Inductive, active, changeable.

Table XI.

HERBIVOROUS.		ORGANS.		CARNIVOROUS.
Heavy	Plus	BONE	Minus	Light.
Normal	Minus	BRAIN	Plus	Large, rarely very small, in relation to body weight.
Long, complex	Plus	GASTRO-INTESTINAL	Minus	Short, simple.
	Minus	GENITAL	Plus	Always relatively in excess.
Thin, light	Minus	HAIR	Plus	Thick, dark.
Large	Plus	HEART	Minus	Small.
Large or cystic	Plus	HYPOPHYSIS	Minus	Often small.
Large	Plus	KIDNEY	Minus	Small.
Large	Plus	LIVER	Minus	Small.
Usually expanded, often emphysematous	Plus	LUNGS	Minus	Usually compressed, often atalectatic.
Normal	Minus	LYMPHATIC	Plus	Nodes often enlarged or deficient.
Short, thick	Plus	MUSCLES	Minus	Long, thin.
Small	Minus	OVARY	Plus	Always large, often cystic.
Large	Plus	PANCREAS	Minus	Small.
Small	Minus	PENIS	Plus	Large.
Often hypertrophied	Plus	PROSTATE	Minus	Usually small.
Thick, moist, pink	Plus	SKIN	Minus	Thin, dry, sallow, pigment +
Normal	Minus	SPLEEN	Plus	Large or small.
Large, especially fatty cortex, pigment layer usually +	Plus	SUPRA-RENAL	Minus	Small, with narrow cortex, pigment usually absent.
Small	Minus	TESTES	Plus	Large.
Normal or large	Plus	THYMUS	Minus	Small or very large.
Small, often deficient	Minus	THYROID	Plus	Large, often ++
Large, often myomatous	Plus	UTERUS	Minus	Small.

Table XII.

HERBIVOROUS.		PHYSICAL.		CARNIVOROUS.
May be large throughout	Minus	ABDOMEN	Plus	Prominent only below umbilicus.
	Minus	ADAM'S APPLE	Plus	Prominent.
Never in this type	Minus	ASTHENIA	Plus	Also neurasthenia, myasthenia, etc.
Large	Plus	ANKLE	Minus	Small.
Broad, flat	Plus	BACK	Minus	Narrow, round.
Heavy	Plus	BONE	Minus	Light.
Normal or large from congestion	Minus	BREAST	Plus	Absent or large and pendant.
Rounded	Minus	CHEEKBONE	Plus	Prominent.
Square	Plus	CHIN	Minus	Pointed, long or short.
Usually good	Plus	CIRCULATION	Minus	Usually bad, extremities frequently cold and often purple in color.
Wide	Plus	COSTAL ANGLE	Minus	Very narrow.
Thick, wide, simple	Minus	EAR	Plus	Thin, long, convoluted.
Thick, short	Minus	EXTREMITIES	Plus	Thin, long.
Far apart	Plus	EYES	Minus	Close together.
Often excessive	Plus	FAT	Minus	Usually deficient.
Short, wide	Minus	FINGERS	Plus	Long, tapering.
Short, wide	Minus	FOOT	Plus	Long, tapering.
Usually square	Plus	FOREHEAD	Minus	Often receding.
Wide, often square	Minus	HAND	Plus	Long, tapering.

Table XII. (*Continued.*)

HERBIVOROUS.		PHYSICAL.		CARNIVOROUS.
Normal, round, square or sugar-loaf	Plus	HEAD	Minus	Long, large, rarely microcephalic.
Short, thickset	Minus	HEIGHT	Plus	Tall, lanky.
Often very large	Plus	HIPS	Minus	Usually small.
Often emphysematous	Plus	LUNGS	Minus	Often atelectatic.
Heavy, short, thick, muscle belly long and tendon short	Plus	MUSCLES	Minus	Slender, long, thin, muscle belly short and tendon long.
Short, thick, muscles heavy	Minus	NECK	Plus	Long, thin, muscles slender.
Short, wide, flat	Minus	NOSE	Plus	Long, thin, prominent.
Arch low	Minus	PALATE	Plus	Arch high.
Wide, flat, rigid	Plus	PELVIS	Minus	Small, round, flexible.
Usually slight	Minus	PIGMENT	Plus	Often excessive.
Usually acquired if present	Minus	PTOSES	Plus	Usually present, often congenital.
Normal, flat	Minus	SCAPULAE	Plus	Angel wing.
Heavy, wide, square	Plus	SHOULDERS	Minus	Usually narrow, sloping.
Thick, pink, moist	Plus	SKIN	Minus	Thin, sallow, dry.
Abundant, odorless, alkaline	Plus	SWEAT	Minus	Scanty, offensive, acid.
Full, tubular, barrel-shaped	Plus	THORAX	Minus	Flat, peg-top.
Seldom small	Plus	WAIST	Minus	Often very small.
Often excessive	Plus	WEIGHT	Minus	Usually deficient.
Thick	Plus	WRIST	Minus	Thin.

Table XIII.

HERBIVOROUS.		REPRODUCTIVE.		CARNIVOROUS.
Normal or large from congestion	Minus	BREAST	Plus	Absent or large and pendant.
Small, seldom cystic	Minus	OVARY	Plus	Large, cysts frequent and may be of great size.
Small	Minus	PENIS	Plus	Large.
Hypertrophied frequently	Plus	PROSTATE	Minus	Small.
Labor often difficult; pelvis rigid, flat	Minus	REPRODUCTION	Plus	Labor usually easy; pelvis flexible, round.
Small	Minus	TESTES	Plus	Large.
Large, frequently myomatous	Plus	UTERUS	Minus	Small.

Table XIV.

HERBIVOROUS.		SKELETAL.		CARNIVOROUS.
Hypertrophic	Plus	ARTHRITIS	Plus	Atrophic.
Heavy	Plus	BONE	Minus	Light.
Wide	Plus	COSTAL ANGLE	Minus	Narrow.
Wide	Plus	COSTO-VERTEBRAL ANGLE	Minus	Narrow.
When present, usually occurs in this type	Plus	LUMBO-SACRAL JOINT INVOLVEMENT	Minus	
Wide, rigid, flat	Plus	PELVIS	Minus	Narrow, flexible, round.
Heavy, wide	Plus	VERTEBRAL PROCESSES	Minus	Light, narrow.
	Minus	SACRO-ILIAC JOINT INVOLVEMENT	Plus	When present, usually occurs in this type.
Heavy	Plus	VERTEBRAE	Minus	Light.

THE ROENTGEN DIAGNOSIS OF GALL-STONES BY IMPROVED METHODS.

By Lewis Gregory Cole, M.D., New York,

Professor of Roentgenology, Cornell University Medical College;

and

Arial W. George, M.D., Boston,

Assistant Professor, Department of Roentgenology, Tufts College Medical School, Boston.

Up to about three years ago gall-stones were detected by the Roentgen method of examination in such a small percentage of the suspected cases that most Roentgenologists, including ourselves, did not recommend the examination, and made it only when urged to do so. Several of us found, however, that gall-stones containing calcium could be detected much more frequently than we had supposed, and this discovery stimulated the search for them. As yet, only a few Roentgenologists had published reports on gall-stones.[1] In 1913, however, four observers reported almost simultaneously that gall-stones could be detected Roentgenographically in from 50 to 70% of the cases in which they were really present.[2] This estimate of the percentage of gall-stones was obtained in two ways. Case reported detecting 50 in 1000 cases. Cole reported detecting 20 in 499 cases. As these observations were made during about the same period, and each reported independently of the other, it was significant that the percentage was almost identical in the two reports.

It is a well recognized fact that gall-stones are found in 10% of all adult cases submitted to post-mortem examination, and as we were able to detect them in 5% of the cases in a routine gastro-intestinal examination, we therefore concluded that we could find them in about one-half of the cases where they were present.

Pfahler estimated that he could detect gall-stones in 74% of the cases, which according to him, was 24% more than could be obtained by other Roentgenologists.

His percentage was based on 29 cases operated on for gall-stones, in 27 of which stones were found. He had reported findings in twenty of these, but had been unable to detect them in seven where they existed, and in two cases he had reported probable stones wherein no stones were found,—a record of nine erroneous diagnoses.

Therefore, what Pfahler really reported was 31% of erroneous diagnosis, rather than a percentage of accuracy.

When stones are detected by Roentgen methods, an operation for their removal is almost universally assured, and unless there are errors in interpretation, the stones are found. But if no stones are found through these methods, the operation is not so likely to be performed, and of this case one has no knowledge of whether or not stones are present. Therefore such a method of estimating the percentage is not accurate.

A series of cases might be examined, however, in the manner employed by Brewer and Cole,[3] in gastro-duodenal lesion, viz: If by using all other methods combined, the surgeon determines that gall-stones are present, he will operate for them regardless of the Roentgen findings. The Roentgenologist makes his examination, making a definite negative or positive diagnosis exclusively on the Roentgen findings and the operation, and then compares the findings. This method of estimating would give one an accurate percentage of the cases that are detectable by Roentgen rays.

Among the Roentgen plates exhibited at the last meeting of the Roentgen Ray Society, George showed 15 cases of gall-stones, each presenting faint shadows of the calculi. Some of these were so indistinct that even a keen observer would have failed to detect them, and Cole was even doubtful of the significance of the shadows in some cases, although in a previous communication,[4] he himself had described and attempted to illustrate an article on gall-stones with two or three similar Roentgen plates.

Since we have paid close attention to the gall-bladder region in the routine gastro-intestinal examinations, studying the cases observed by this method, and reviewing previous Roentgen plates of the gall-bladder, much valuable information has been obtained which has led us to believe that we can detect stones at least twice as frequently as before. After having considered that we detected them in 50% of the cases, it would now appear that we can show them in all cases where they are present.

One of the writers (Cole) new believes that far more than 10% of the cases presenting themselves for a Roentgen examination of the stomach and the gall-bladder region, have gall-stones, and therefore that one is not justified in estimating the percentage of detectable gall-stones in the manner previously employed by him and Case. Having once made this error, Cole hesitates to base the percentage of detectable gall-stones on anything less than such a test as that employed by Brewer and Cole on gastro-duodenal lesions. But we believe this method is sufficiently accurate to justify a careful Roentgen examination of every patient over forty who complains of gall-bladder or gastric symptoms.

A positive Roentgenologic diagnosis can be made in such a large number of the cases where gall-stones are present, that the negative diagnosis has become far more important than it was previously considered to be.

The technic is not radically different from that employed for soft tissue detail in any other part of the body; but it requires conscientious attention to the most minute points, and one must not be satisfied with the Roentgen plates, unless detail is shown to the greatest possible degree. Roentgen plates obtained by improved technic, show extraordinary detail; in two cases even the pelvis of the kidney, the blood-vessels going to and from it, and the upper part of the ureter were remarkably distinct.

Our opinions differ as to the advisability of catharsis prior to the examination. One of the writers (George) considers that the gas usually resulting from a cathartic is a more disturbing factor in the interpretation of the Roentgen plate than the fecal content of the colon. This, he thinks, may aid in determining the location of the gall-bladder. His colleague (Cole) on the other hand, thinks that a thorough catharsis and total abstinence from food for twelve hours prior to the examination is very essential; also that the gas in the colon often serves to accentuate the calculi, and in a previous communication,[5] he has advocated the artificial injection of air into the colon in some doubtful cases as a means by which shadows of gall-stones may be accentuated or identified.

The use of the Coolidge tube enables one to obtain an accuracy of penetration which is unattainable with a standard tube. Roentgen plates showing brilliant bone detail with considerable density of the soft parts are not desirable for the diagnosis of gall-stones. Soft "monotonie" Roentgen plates obtained with the Coolidge tube, are deprecated by some critics because marked contrast in the bony structure is lacking; but they show remarkable gradations in the soft tissue—a result for which one strives when in search of gall-stones.

Minor condemned fine Roentgen plates of the lungs as compared with the fluoroscopic image, because they showed so much detail in the soft parts as to make them difficult to interpret. It is the interpretation of these very details that increases the accuracy of diagnosis, whether it be the chest or gall-bladder that is under consideration.

One of the co-authors herein (Cole) strives to obtain this detail by using a small focal point tube of a penetration just sufficient to cast an image on the screen beneath the patient, and makes the exposure long enough to obtain the desired density of the Roentgen plates, whilst his colleague, (George), considers speed an important factor, and uses a fairly large focal point with varying penetration, making the exposure so short that it practically eliminates the effect of the involuntary motions of the body, particularly gastric and intestinal peristalsis and pulsations of the blood vessels.

The necessity of using an extremely small cone, showing only a limited area in each Roentgen plate is strongly emphasized. The length of the cone is not an essential factor. By means of such a cone secondary rays are generated in the patient to a much less degree, and the fogging effect being proportionately diminished it is then possible to show distinctly a calculus that would be quite invisible if a large or moderate sized blend were used. The cone may be pointed obliquely downward, so that the axis of the rays is parallel with the under surface of the liver. When this is done, the under surface of the liver appears as a clear cut and well defined line; and the gall-bladder, if normal, can usually be detected, or the relation of the patient to the tube may be altered by a slight rolling from side to side. Sometimes, particularly when the gall-bladder is high, a lateral position will show the gall-stones against the background of the liver.

It matters very little whether screened or unscreened plates are used. Some plates may be made with screens, and some without them. The unscreened plates should be exposed face to face, and slightly undertimed, with a view to matching up the shadows thereon after development. Double screened plates also may be made in a special holder, constructed to carry screens of different rapidity. Two plates and two screens of different speed are used in the same holder. The plates are placed back to back. The under one face down, lies against a fast screen, whilst the upper one lies face upward against a relatively slow and thin screen. A very short or even undertimed exposure is made, and after development the plates are superimposed and matched together, whereupon by transmitted light one gets the plastic effect up to a certain point. This method eliminates screen and plate defects to a great extent.

Roentgen stereoscopy adds very materially in the interpretation of the Roentgen plates. Four exposures may be made, preferably with each exposure on the two plates face to face, giving a slight lateral shift to the tube between the first and second exposures. Then move the tube down about two inches and make two more exposures, shifting the tube once more in the lateral direction between the third and fourth. In this manner, one can stereoscope the various exposures with each other, that is to say, 1-2 and 3-4 stereoscoped with each other laterally; and 1-3 and 2-4 stereoscoped with each other vertically.

Comparison from behind avails little; but small areas may be brought close to the plate for detailed examination, by the use of a circular plate-holder about the size of the end of a small compression blend. This holder, with or without a screen, may be pushed up under the edge of the rib, thereby materially diminishing the thickness of that part of the abdomen.

The entire region from the eleventh rib to the crest of the ileum or even lower, should be included in the examination. As repeated exposures are required, and as some of the plates are not screened, the total exposure is considerable, and a filter should always be used to prevent dermatitis. If after careful study of at least fifteen or twenty Roentgen plates of the gall-bladder, no evidence of the calculi is found, the patient should be submitted to an examination of the stomach, duodenum, and colon, in a search for adhesions from cholecystitis without stones, or for the purpose of differentiating this condition from post-pyloric ulcer and appendicitis with reflex gastric symptoms.

Even when there is direct evidence of the stone, this additional information is of great value in determining whether or not there is a concomitant lesion, whether or not surgery is indicated and how difficult the operation may be.

Although the technic herein described greatly facilitates the interpretation of the Roentgen plates, gall-stones may be detected in the ordinary Roentgen plate, in a large percentage of cases if one is familiar with their Roentgenographic appearance.

Of late, a re-examination has been made of those Roentgen plates taken during the last four or five years in which direct evidence of gall-stones was insufficient or undetected, but which showed enough evidence of adhesions from the accompanying cholecystitis to justify surgical procedure. In the re-examination, our increased knowledge of the Roentgenologic appearance of soft gall-stones has enabled us to detect direct evidence of the calculus on the Roentgen plate, in a large number of cases where calculus was found at operation.

The same results have been obtained from a re-study of those cases where the gall-bladder only was examined, and a negative diagnosis was made. The gall-stones found at operation in these patients can now be identified in the original Roentgen plates. The evidence was there before, but we were then unable to recognize it.

Of all the aids to be suggested for detecting calculi, the method of matching together the shadows by superimposing one Roentgen plate over another, as described in a previous communication,[6] is probably the most important. By far the best illumination can be obtained by holding the plate obliquely at an arm's length against the northern sky. A concave lens or better still a pair of opera glasses used in the reverse direction, will accentuate contrasts. For examining a small area, a magnifying glass may be helpful, especially in identifying the facetted side of small calculi.

A lantern slide made of superimposed Roentgen plates, will sometimes accentuate the contrast and bring out details not observed in the original plates. Thus very faint shadows may sometimes be shown well enough for lantern slide demonstration or reproduction; whereas others cannot be demonstrated or reproduced for publication, because the shadows concentrated on the slides are diffused by enlargement.

Identification of the gall-bladder aids materially in the detection of calculi, and is a detail which one should always try to obtain. It can be detected in nearly every case where it exists, normal in size or dilated. The gall-bladder may be found anywhere from the region of the eleventh rib to the fifth lumbar vertebra. In one case, it was located as far down as the sacrum. As a rule, it will be seen below the lower border of the liver. If, after taking a number of Roentgen plates, the gall-bladder is not found in the normal position, it can sometimes be located when a subsequent bismuth examination is made, by noting the position of the transverse colon.

Roentgenographically, gall-stones are divided into two definite groups: (1) Stones which contain considerable calcium, and (2) Cholesterine stones which contain no calcium, or only a trace of it. Gall-stones containing a large proportion of calcium can be shown without much difficulty and are sometimes so dense as to be mistaken for renal calculi.

The dense calcareous gall-stones are a type of calculi infrequently found; this perhaps explains why the study of gall-stones has made little advance since they were first observed. By far the greater number of gall-stones consist of cholesterine nucleus, with a calcareous coating, or *vice versa*. When the peripheral concretions are thin, which is true in about 50% of the cases, the stones are difficult to detect. With increasing density of the coating, the ring-like appearance is proportionally more marked and relatively easier to discover; but it is probably safe to say that the absolutely pure cholesterine stone is a rare entity[7].

Unless unusual care is used in making and interpreting Roentgen plates, cholesterine stones containing only a trace of calcium will be entirely overlooked in the future, just as they have escaped observation in the past. It is not the shadow producing quality of the stone as a whole that concerns us in this class of case, but rather the shadow cast by the long diameter of the periphery of the stone. Whether the stone be facetted, spherical or a combination of both, in some particular diameter there will be sufficient density to cast a peripheral shadow. This explains in part why a single Roentgen plate of a series will often reveal a perfectly characteristic gall-stone, whereas all previous plates of the same region show only questionable shadows. If each individual stone in a mass of small stones does not cast a well-defined shadow, the shadow of the entire mass will often give the clue.

The interpretation of suggestive shadows in the region of the gall-bladder is fraught with difficulties, similar to those experienced when positive diagnosis of kidney stones was first attempted. The present accuracy in diagnosing renal stones is the result of experience gained through numerous errors. Some of the disturbing factors in the gall-bladder region, such as intestinal contents, calcified mesenteric glands, costo-chondral ossification, and stones in the kidney and liver, have been enumerated in previous articles.[8] Recent experience has added to our knowledge of possible pitfalls. Food in the cap is a particularly confusing finding, because its density corresponds to the faint shadow of a stone, and its size and position add to the illusion. Upon minute examination, however, it will be found that the shadow of food in the cap lacks the ring-like circumference of the cholesterine stone with a calcareous shell; neither has it the homogeneous character of the calcium stone, but is rather mottled in appearance. Moreover, it is usually possible to completely identify the shadow by tracing the outlines of the adjoining pars pylorica. Where the shadows are obscure several Roentgen plates matched together, will increase the density. A disturbing element of the same character is food contained in a single haustrum of the colon at the hepatic flexure. Being broad at one end and tapering to a fine point at the other end, it resembles an almond-shaped calculus. Abstinence from food eliminates results from this error.

Another interesting finding, and one which is visible only to the eye trained to pick up the slightest variation in density, is the presence of little rings, often no larger than a good sized pinhead, sometimes found in groups, sometimes isolated, in varying shapes of round, oval, or even quite irregular form. It is quite possible that these infinitesimal findings are the walls of bloodvessels seen in cross section.

It is a mistake to study Roentgen plates when they are wet, not only because reflected light cannot be avoided, but also because there is risk of damaging the plate.

A careful study of the clinical history of cases in which gall-stones are definitely shown by Roentgen methods, reveals the futility of expecting the classical gall-bladder symptoms to agree with the Roentgen diagnosis.

Before the advent of the x-ray, renal colic and renal calculi were considered almost synonomous terms. But surgical procedure for renal colic in cases where no calculus was shown on the Roentgen plate, eventually proved that only about one fourth of the cases having typical attacks of renal colic had a calculus of sufficient size to be found by surgical exploration. On the other hand, only about one fourth of the cases in which kidney stones were definitely demonstrated by Roentgen methods, had anything simulating renal colic.

Our present experience indicates that the same observation will hold true in the gall-bladder region; that only when a gall-stone passes or engages does it cause the typical gall-stone colic, and this is relatively rare compared with the frequency of gall-stones.

The clinical indications of cholecystitis compare with those of pyelitis, except that one does not detect the presence of pus in the stools as readily as he detects it in the urine. Some of the cases of gall-stones give practically no characteristic symptoms of gall-stones, but are associated with obscure gastric or neurotic symptoms.

Therefore, any case presenting gastro-intestinal symptoms with absence of Roentgen evidence of an organic lesion of the stomach or intestines, should be submitted to a careful Roentgen examination of the gall-bladder. This is particularly true if, as Deaver suggests, the patient is "fair, fat and forty, and belches gas."

It is much easier to detect the stone in this class of case, than in thin, wiry, poorly nourished people who have no fat to outline the gall-bladder, and whose muscle is nearly as dense as bone. In persons under twenty-five, the peripheral coating of the stone is not usually dense, and the stone is so soft that it does not show even a dim peripheral ring or edge. Post operative cases with extensive adhesions, carcinoma of the liver or gall-bladder, and ascites also render negative diagnosis exceedingly difficult if not impossible.

Diagnostic accuracy is directly in proportion to the care exercised in making the examination, and one's experience in detecting and interpreting the findings. Statistics are of little value until thousands of cases have been observed by methods as careful and detailed as those described above. By that time the value of the method will be generally acknowledged, and statistics will not count for any more than they do now in cases of renal calculi or fractures.

The Roentgen method of diagnosing gall-stones has become so accurate that if there is no direct Roentgen evidence of gall-stones, or indirect evidence of adhesions involving the stomach, cap, duodenum, or colon, as a result of cholecystitis, the surgeon should have a preponderance of clinical evidence as a warrant in operating for gall-stones.

RESUMÉ.

1. Until within three or four years, gall stones were rarely detected by Roentgen rays.

2. During the last few years several Roentgenologists, including ourselves, consider that they have detected gall-stones in about 50% of the cases examined. This was estimated in different ways by different men.

3. Experience has shown that gall-stones may be detected about twice as frequently as formerly by: (a) A special technic for making the Roentgen plates; (b) A minutely careful study of the Roentgen plates by various methods; (c) A thorough intimacy with the Roentgenographic appearance of gall-stones.

4. By applying the new method of interpretation, gall-stones have been detected on many Roentgen plates made by the old technic, and formerly diagnosed as negative.

5. By means of the special technic for making and interpreting Roentgen plates, a positive diagnosis may be made in so many cases, that the negative diagnosis has become of considerable significance.

6. Much care and study will be necessary to properly interpret the additional detail which can be obtained by the special technic, and undoubtedly some erroneous diagnoses will be made. (Cole has made two such erroneous diagnoses in the last month, and has thereby learned to differentiate the food in the cap and the feces in the haustra of the colon from evidence of calculi.)

7. If there is no direct Roentgen evidence of gall-stones, the stomach, cap, duodenum and colon should be examined for adhesions from an accompanying cholecystitis.

8. If there is no direct or indirect Roentgen evidence of gall-stones, the clinical history should be more characteristic than usual before one resorts to surgical procedure.

REFERENCES.

[1] Beck: Numerous articles and a chapter on Gall-Bladder in Groedel's Atlas der Röntgendiagnostic in der inneren Medizin, München, 1909.

Pfahler: Die Röntgenstrahlen als Hilfsmittel bei der Gallensteindiagnose, Fort. a. d. Geb. d. Rönt., by. xvi, H. 5, S. 335-337, April, 1911.

Gastric and Duodenal Adhesions in the Gall-Bladder Region and Their Diagnosis by the Roentgen-Ray, J. A. M. A., Vol. lvi, No. 24, June 17, 1911, pp. 1777-1779.

The Roengen-Rays in the Diagnosis of Gall-Stones and Cholecystitis, J. A. M. A., Vol. lxii, No. 17, Apr. 25, 1914, pp. 1304-1306.

Lenne: Experimentale Untersuchungen bezeuglich der Darstellung von Gallensteinen durch Röntgenstrahlen, Erfurt, 1912. G. Richters.

Holland: On Gall-Stones, Arch. of the Roent. Ray, Mch., 1913, p. 374.

[2] Lewis Gregory Cole: The Roentgenographic Diagnosis of Gall-Stones and Cholecystitis read before the Atlantic County Med. Soc., May 9, 1913. Published in Surgery, Gynecocolgy and Obstetrics, Feb., 1914, pp. 218-227.

James T. Case: Roentgenography of the Liver and Billiary passages, with Special Reference to Gall-Stones. Read in the Section on Surgery of the American Med. Asso., Minneapolis, June, 1913. Published in Journal of the American Med. Asso., Sept. 20, 1913.

George E. Pfahler: The Roentgen-Rays in Diagnosis of Gall-Stones and Cholecystitis. An Improvement in Technic. Read before the Philadelphia County Medical Soc., Mar. 11, 1914. Published in the Journal of the American Med. Asso., Apr. 25, 1914, Vol. lxii, No. 17.

Arial W. George and I. Gerber: Demonstration of Gall-Stones by the Roentgen-Ray. Published in the BOSTON MED. AND SURG. JOUR., Apr. 30, 1914, Vol. clxx, No. 18, p. 680.

[3] Annals of Surgery. Current Number.

[4] Cole: Roentgenographic Diagnosis of Gall-Stones and Cholecystitis, Surg., Gynec., and Obstet., Feb., 1914, pp. 218-227.

[5] Cole: The Roentgenographic Diagnosis of Gall-Stones and Cholecystitis, Surg., Gynec., and Obstet., Feb., 1914 pp. 218-227.

[6] The Roentgenographic Diagnosis of Gall-stones and Cholecystitis, Surgery, Gynecology and Obstetrics, Feb., 1914, pp. 218-287.

[7] Aschoff and Backmeister: Die Cholelithiasis, Jena, 1909.

[8] Cole: The Roentgenographic Diagnosis of Gall-Stones and Cholecystitis, Surgery, Gynecology and Obstetrics, Feb., 1914.

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. A CRITICAL ANALYSIS OF 134 MICROSCOPICALLY PROVEN CASES.

By Torr Wagner Harmer, M.D., Boston,

Assistant in Anatomy, Harvard Medical School; Junior Assistant Surgeon, Children's Hospital; Assistant in Surgery, Massachusetts General Hospital.

In the Boston Medical and Surgical Journal of August 13, 1914 (Vol. clxxi, pp. 253-261), I published a paper based upon observations made during the past five years upon 91 cases treated with mixed toxins of erysipelas and bacillus prodigiosus.* Some of these cases were under treatment too short a period to be of value in determining the efficiency of the toxins. Some were early cases in the series in which the doses were too small. Some cannot be traced by letters, visits to former homes, state or city records. Some were cases in which no pathological report was obtained. Some were cases of microscopically proven carcinoma. Some were cases of proven sarcoma in which toxins were administered as a prophylactic against recurrence after operations which might of themselves have cured (amputations without demonstrable metastases, etc.). Obviously in a critical analysis to determine the efficiency of toxins in the treatment of sarcoma such cases were excluded. There remained 32 cases. These were analysed; first, according to the type of sarcoma, and second, according to the anatomical situation and tissue of origin. These 32 cases were all primary or recurrent inoperable sarcoma, or cases in which the disease could not be eradicated by operation. All were proven by microscopic examination. All were under treatment at least three weeks. In all cases the results were free from vitiation by concurrent treatment (x-ray, radium, arsenical preparations, etc.). All living cases had been seen or heard from within three months.

The purpose of this study was to determine, if possible, the type or types of cases in which this treatment offered expectation of benefit. Obviously the answer to this question obtained by an analysis of so small a series of cases could be only suggestive. Despite many failures the most rigorous criticism of certain hopeless inoperable cases in which growths have permanently disappeared and no metastases have occurred must admit apparent cure attributable either to the toxins or to spontaneity. Factors are concerned of which we have no knowledge, and spontaneous cures have doubtless occurred. The percentage of apparent cures occurring with the use of toxins seems, however, too large to attribute to spontaneity. On account of a comparatively small percentage of most encouraging results an effort has been made in this paper to assemble a larger series of cases of sarcoma treated with the toxins in order to make more trustworthy deductions regarding their efficiency. To this end there have been added to my previously reported cases a few personally treated since the former publication and certain cases reported by Dr. Coley which have conformed to the criteria adopted in my earlier paper. Dr. Coley kindly sent me a copy of his address before the Third International Conference of Cancer Research held at Brussels in August, 1913. His monograph may be divided into five parts, viz.: the use of mixed toxins in inoperable sarcoma (81 cases), their use as a prophylactic after operations (9 cases), their use in inoperable carcinoma (8 cases), their use in the hands of other men (12 cases), and a tabulation of 125 cases also treated by other men. Our present inquiry is not concerned with use of the toxins in carcinoma nor as a prophylactic after operation. All of the other cases, 218 in number, have been abstracted and tabulated, as far as possible, after the manner of my own cases. Dr. Coley's recent paper on Sarcoma of the Long Bones in the *Annals of Surgery,* (1914, vol. lx, Nov., pp. 537-566) contains four cases not included in his Brussels address. These have been added, making a total of 222 cases. The data recorded has been, name or number of patient, age, sex, occupation, clinical diagnosis, duration of disease before operation or toxin treatment, history of trauma or irritation, nature of operation, interval between operation and toxins, size of growth before operation, size of growth when toxins started, site of injections, pathological diagnosis, tissue of origin, duration of treatment, maximum dose, character of reactions, effect of toxins on size and consistency of the growth and on pain, remarks of interest, and end result.

Only those cases in which data are given, which conform with the criteria adopted for an analysis of my own cases, have been selected for this series. In other words, all cases must have been proven by microscopical examination; all must have been primary or recurrent inoperable sarcoma, or cases in which the disease could not be eradicated by operation; all must have been under treatment at least three weeks; all must have been free from concurrent treatment (x-ray, radium, arsenical preparations, etc.). Of the 222 cases which have been abstracted 100 have been chosen as suitable for this analysis. Perhaps I have been very critical and have excluded cases which by others might have been judged worthy of consideration. The question is vital. The toxins have merit but the treatment is distressing. I believe, therefore, that conclusions furnished only by most rigorous criticism should be accepted.

Following the plan pursued in my previous paper I have arranged the cases in six groups determined by the effect of the toxins.

Group A includes those cases in which there was no appreciable effect. There were 12 cases.

---

* I wish to express my appreciation to members of the staff of the Massachusetts General Hospital through whose courtesy this study was made possible.

Group B. includes those cases in which the growths softened but did not appreciably diminish in size. This softening may be fairly attributed to the toxins rather than to increased vascularity and cellularity associated with rapid growth; for it occurred at the site of the injections. There were 5 cases.

Group C includes those cases in which growths disappeared or practically disappeared, but returned. There were 20 cases.

Group D includes those cases in which growths disappeared but metastases simultaneously occurred. There were 10 cases.

Group E includes those cases in which growths diminished in size but still persisted. In this group have been included those cases in which inoperable masses have been so reduced that operations have subsequently been performed. A very few cases of this description have shown upon pathological examination no remaining trace of sarcoma. Such cases, in which the pathological reports have been made by pathologists of repute, have been included in Group F, apparent cures.

Growths treated with mixed toxins may disappear either by undergoing marked necrosis (becoming soft and fluctuant), by what appears to be simple absorption (probably the same process as the first but absorbing as fast as broken down so that no fluctuant tumor occurs), or by acute inflammation followed by resolution with a resulting fibrous mass. The latter process has been demonstrated microscopically in a series of photomicrographs in my previous paper.* A period of inflammation is followed by one of young connective tissue and blood vessels resulting eventually in fibrous tissue. The tumor in such cases is destroyed by an inflammatory process. With this microscopical evidence it seems fair to consider such cases apparent cures. All other cases with residual masses that have not been examined microscopically have been included in Group E. There were 14 cases.

Group F includes those cases which are apparent cures in which growths have disappeared and no metastases have occurred. There were 73 such cases.

Again following the plan pursued in my previous paper these 134 cases have been analyzed; first, according to type of sarcoma, and second, according to the tissue of origin or anatomical situation.

Table I.

ANALYSIS OF CASES ACCORDING TO TYPE OF SARCOMA.

Group	A	B	C	D	E	F	Totals	
Spindle cell	2	1	5	1	1	22	32	41
Fibro-sarcoma	2				3	4	9	
Round cell			4	1	4	14	23	56
Small	1	1	8	2	2	13	27	
Large	3		1	1		1	6	
Melanotic				5		1		6
Giant cell	1	1			1	11		14
Mixed cell	3	2	2		1	5		13
Leiomyoma					1	1		2
Angiosarcoma					1			1
Hypernephroma						1		1
Totals	12	5	20	10	14	73		134

In Table I* is shown an analysis according to the type of sarcoma.

Spindle Cell Sarcoma. It so happened in my previously recorded cases that the pathologists' reports indicated the type of spindle cell, small or large. This distinction was, therefore, made in the previous analysis. It was interesting to note that of the three cases of each type there were no apparent cures of the small cell type, whereas there was one of the large cell type. This distinction of the size of cell may not be important. It is seldom made in Coley's case reports. In this present analysis, therefore, both have been assembled under the head spindle cell. The term fibrosarcoma, however, has been retained. Of the former there appears 22 apparent cures, of the latter four; a total of 26 cases, that is, about 36% of the total number of apparent cures.

Round Cell Sarcoma. In my previously reported cases a differentiation between small and large round cell cases was made. This has been followed, as far as possible, in this series. In a considerable number this distinction is not made, so the general term round cell has been used. The apparent cures include 14 cases of round cell, 13 cases of small round cell, and one case of large round cell; a total of 28 cases or about 39% of the total number of apparent cures. I am interested to note only one apparent cure of large round cell type. In my previous paper I made the observation that of about an equal number of cases of each type there were no apparent cures of the large cell type, whereas there were two of the small cell type. This larger series apparently substantiates this observation. The treatment of inoperable round cell sarcomata with mixed toxins, therefore, offers reasonable expectation of benefit, especially the treatment of the small round cell type.

Melanotic Sarcoma. In the previous series of cases it was observed in cases with multiple melanotic growths that individual tumors might be destroyed but coincident with this local benefit untreated tumors were increasing in size and new metastases were forming. All cases fell in Group D. One case, however, in which the treatment of a single large melanotic growth was undertaken lived for two years and two months. This case was given the largest single dose I have seen recorded, 52 minims. He displayed great tolerance for the toxins. The prognosis appeared favorable, as previously reported, until a spree of nineteen days was indulged in. After this his tolerance was greatly diminished so that only a dose of 4 or 5 minims could be given and metastases in various tissues appeared in quick succession.* I was led to state that the toxins offered no expectation of benefit in cases of multiple melanotic growths but that they might be legitimately tried in cases with single melanotic growths. It is interesting to note in this larger series that five of the six cases fall also in Group D and that the other case, that of Dr. Greenwood of Leeds, England, was a single large growth. This case is an apparent cure, the only cure of a melanotic case that has come to my notice. These facts seem curiously to substantiate the conclusions previously made from observations of a smaller series of cases.

---

* I am indebted to Mr. E. S. Brown of the pathological laboratory at the Massachusetts General Hospital for his care and skill in the production of these pictures.

* In the tables both my successes and my failures have been recorded. The full title of Coley's Brussels address, however, shows that he wished principally to set forth cases successfully treated. Some failures, however, were included. These tables, therefore, cannot be accepted as showing the proportion of failures and successes.

Giant Cell Sarcoma. There is much disagreement at present regarding the nature of these growths. Certain pathologists and surgeons maintain that they are true malignant tumors, *i.e.* capable of forming metastases (Coley, Eve, Maybury). Others admit that such growths are prone to recurrence but deny them malignancy in the sense of forming metastases. The name giant cell tumor (Bloodgood), instead of giant cell sarcoma, has, therefore, been suggested. Again Barrie, of New York, believes that the process is only inflammatory, an osteomyelitis. Without discussing these opinions it is true that many cases of this condition can be cured by one or more curettings or resection. Other cases on account of size or situation may require amputation. Still others, probably the smallest group, cannot be cured by surgery alone. I refer in particular to more or less extensive involvement of the vertebrae. In considering growths originating in the medullary cavity of bone it is to be remembered that some may arise from endosteum and others from marrow elements. It is to be remembered that osteoclasts are present and these, I believe, may be regarded as foreign body giant cells of endothelial origin. The presence of some giant cells in medullary tumors is, therefore, to be expected. It is to be remembered that some of these tumors remain limited to bone. They may be expansile but for a long period remain localized. Spontaneous fractures may occur and heal. This class may be regarded as one type of bone cyst and considered myxomata. We are all familiar with another type which more quickly ruptures the bone, invades the soft parts, grows with great rapidity, often to considerable size, and not infrequently causes death. In selecting cases for this series I have had this type of case in mind. The term giant cell sarcoma has, therefore, been retained. Finally these medullary growths do not, in the majority of cases at least, conform with the condition commonly called osteomyelitis.

In my previous series were reported four cases which it seemed fair to regard as giant cell sarcomata. Two of these were apparent cures. There have been added in this series ten cases including nine apparent cures, making a total of eleven apparent cures. The character of these cases, as shown in the case epitomies at the end of the paper, will, I believe, justify the use of mixed toxins in selected cases. Certain cases are appropriately treated by one or more curettings, others by resection, and still others on account of their size or situation by amputation. The records seemed to justify a preliminary trial of toxins in carefully chosen cases in which slowly growing tumors have ruptured more or less extensively into the soft parts rather than the immediate sacrifice of the limb. If such treatment is practised, the patient should understand that amputation may ultimately be necessary, and it should not be long deferred in the advent of increased rapidity of growth, repeated hemorrhages, considerable obsorption, or superimposed infection. By this method with skilful judgment a few limbs apparently have been saved.

A small group on account af anatomical situation (more or less extensive involvement of the vertebrae) defy surgical eradication. These, I believe, should be submitted primarily to surgical attack, followed immediately by toxin treatment. The records justify the use of the toxins in such cases.

Mixed Cell Sarcoma. Under this head have been assembled cases with pathological returns of osteosarcoma, spindle cell osteosarcoma, chondrosarcoma, osteochondrosarcoma, etc. It has never been my good fortune to benefit with the toxins any cases of this class. This series, however, shows five apparent cures, viz: mixed cell tumor of the parotid, round and spindle cell sarcoma of the uterus, chondrosarcoma of the ilium, round cell osteosarcoma of the humerus and scapula, and spindle cell osteosarcoma of the superior maxilla.

There remain in Table 1 three cases, a leiomyoma, an angiosarcoma, and a hypernephroma, epitomies of which appear at the end of the paper. The first case (No. 56) was a leiomyoma of the uterus for which hysterectomy was performed. Within a few months the entire pelvis was filled with an inoperable recurrence of hard consistency and irregular outline, apparently involving the bladder. Mixed toxin treatment was instituted. The mass became smaller, softer, more movable, and pain ceased. Treatment was continued with periods of rest for about three years. Three years, eleven months later the patient was in excellent health and local examination showed only slightly more scar tissue than would be expected after an hysterectomy. This was apparently a case of malignant leiomyoma. I have at present under treatment a somewhat similar case referred by Dr. W. J. Mixter. A hysterectomy had been performed for fibroids. Tumors subsequently appeared on the back and paralysis of the legs ensued. Dr. Mixter removed as far as possible a growth involving the vertebrae, complete eradication was impossible. The patient is now able to walk with assistance.

---

* A detailed account of this case with photographs and photomicrographs is given in the Boston Med. and Surg. Jour., 1914, Vol. clxxi, No. 7, August 13, 1914.

Toxin treatment was instituted immediately after operation and has been continued for two months. Pathological reports: 1. Tumor over sacrum, probably leiomyoma; 2, Tumor on right shoulder, leiomyoma; 3, Specimen removed at operation on spine, spindle cell sarcoma. It is too early to predict the outcome but the course has been so far favorable.

The second case (No. 33) was a thrice recurrent angiosarcoma of the breast. Toxin treatment was instituted when the mass extended laterally from the sternum to the anterior axillary line and from the clavicle above nearly to the costal border below. It was fixed to the chest wall and composed of markedly protuberant nodules and considerably ulcerated. Mixed toxin treatment for eight months caused softening and progressive decrease in size. The mass was then operable and was excised. No pathological report is given but the patient was seen eight years later without evidence of recurrence. This case has been recorded in Group E.

The last case (that of Mr. Cornell of Sheffield, England) was a woman of 37 upon whom a transperitoneal nephrectomy was performed for hypernephroma. In four months toxin treatment was started for a huge recurrence and continued for four and a half months with entire disappearance of the tumor. A year later she was seen in excellent health without evidence of recurrence.

Table II.

ANALYSIS OF CASES ACCORDING TO ANATOMICAL SITUATION AND TISSUE OF ORIGIN.

Group	A	B	C	D	E	F	Totals
Nose and sinuses...			2			6	8
Tonsil		1	4			2	7
Parotid			1		1	3	5
Pharynx	1		1				2
Cervical glands....		(1)	4(6)	1	(2)	7(4)	12
Chest wall.........		(1)	(1)		1	1	2
Breast			1		1	1	3
Abdominal wall....						7(2)	7
Axilla				1	(1)	1(3)	2
Groin				(1)	1	2	3
Intra-abdominal ..	(7)		1		1	4(2)	6
Pelvis	1		(1)			1(2)	2
Uterus					2	3	5
Ovary			2		1	1	4
Kidney					1	2	3
Bone (not giant cell)	5	2	2	2	3(1)	13	27
Giant cell	1	1			1	10(1)	13
Fascia and muscle.	3	1	2(1)		1	5(2)	12
Skin and subcu......				5		3	8
Nerve sheath						1	1
Orbit				1			1
Sperm. cord	1						1
Totals	12	5	20	10	14	73	134

ANALYSIS ACCORDING TO ANATOMICAL SITUATION AND TISSUE OF ORIGIN.

In Table 2 is shown an analysis of cases according to anatomical situation or tissue of origin. It was rather striking in my previous analysis to note that five of six intranasal and nasal accessory sinus cases were apparent cures. The others fell in Group C, the growth practically disappearing but recurring. Two cases have been added in this series and it is interesting that one is an apparent cure, and the other falls in Group C. These six apparent cures include fibrosarcoma of the septum and ethmoid, giant cell sarcoma of the antrum and superior maxilla, large spindle cell sarcoma of the ethmoid, small round cell sarcoma of the antrum and ethmoid, small round cell sarcoma of the antrum, ethmoid, superior maxilla, posterior septum and nasopharynx, and spindle cell sarcoma of the ethmoid, superior maxilla and frontal sinuses. The case epitomies show the extent of these growths. I must conclude, as previously, that the toxins are apparently of value in sarcomata arising in the nose and accessory sinuses, whether round cell, giant cell, or spindle cell.

Of the Cervical Gland cases it will be noted that there are seven apparent cures of primary growths and four of metastatic extensions from disease of neighboring structures. The latter are indicated in parentheses. This plan has been followed throughout the paper. Only primary growths are considered in this analysis but, believing that the effect of toxins on direct extensions or metastatic growths might be of interest, I have represented such secondary processes in parentheses. The apparent cures of primary sarcoma of the cervical glands are cases 18-24 inclusive, all reported as round or small round cell type, and composing about 10% of the total number of apparent cures. Add to this number four apparent cures of metastatic involvement. It seems fair to regard the toxins worthy of trial in inoperable cases of this type.

The Abdominal Wall cases are seven in number, 5 of spindle cell type, 2 of round cell type, and all apparent cures. Two extensions to the abdominal wall from sarcoma of the ilium were also apparent cures.

The intra-abdominal cases show four apparent cures including three spindle cell and one round cell. These were all inoperable growths involving in one case the ascending colon, small intestine, omentum, and liver border, and in another case the cecum, omentum, and mesentery In the previous series were recorded seven cases of intra-abdominal sarcoma, all failures. These however, were extensions from thigh, true pelvis, or spermatic cord, or metastases from distant tumors. The apparent cures noted in this table were all primary growths. The two apparent cures recorded in parentheses were spindle cell sarcomata of the abdominal wall involving the bladder.

Of the Bone cases (not giant cell) thirteen apparent cures are recorded; five spindle cell, five round cell, and three mixed cell. The bones involved included two cases of the maxilla, two of the vertebrae, two of the ilium, and one each of the radius, humerus, sternum, metatarsal, tibia, femur, and lower jaw. The results of surgical treatment of periosteal sarcoma of the femur and upper humerus (including hip joint and interscapulo-thoracic amputations) are notoriously poor. An apparent cure of each is here recorded. It need not be stated that sarcoma of the vertebrae often defy surgical cure. Partial operations are necessarily followed by recurrence and subsequently by death. The case epitomies at the end of the paper are, I believe, sufficiently convincing to justify the use of toxins in these inoperable bone cases. The number of apparent cures, furthermore, comprises over 18% of the total number of apparent cures here assembled.

Of the Giant Cell Bone cases the series shows ten apparent cures including three cases with involvement of the vertebrae, two of the superior maxilla, and one each of the sacrum, ilium, inferior maxilla, radius, and femur.

Under heading Fascia and Muscle have been assembled all cases originating from these tissues except those specially listed under headings Chest Wall and Abdominal Wall. There appear five apparent cures of primary growths and two of secondary growths from the spine and metatarsal. Five of the seven are of spindle cell type, including two of the buttock, and one each of the thigh, knee, and calf. The remaining two are growths of the back, both round cell. Cases of sarcomata of the upper extremities appear among the failures in this series but not among the apparent cures.

Skin and Subcutaneous Tissue cases include sarcomata arising from cutaneous and subcutaneous benign growths (pigmented naevi, etc.). The apparent cures include a melanotic sarcoma of the neck, a spindle cell degeneration of a preexisting benign tumor of the shoulder, and a round cell sarcoma of the lip.

In reviewing both tables the type of growth most benefited is seen to be the round cell, 39% of the total number of apparent cures. Of this type the small round cell responds very much more favorably than the large round cell type. The percentage of apparent cures furnished by other varieties is spindle cell 36, giant cell about 15, and mixed cell about 7. It is seen that primary growths of bone (not giant cell) furnish the greatest number of apparent cures, over 18%, the giant cell cases furnish about 15%, cervical gland cases about 10%, and nose and accessory sinus cases about 8%. It has been stated that the spindle and round cell cases were evenly divided in bone and intranasal and sinus cases. The cervical gland cases are all round cell.

Very striking relief of pain is occasionally observed with the use of toxins. Coley makes particular mention of this in cases 85, 104, 55, and 56, namely, periosteal spindle cell sarcoma of the humerus, giant cell sarcoma of the sternum, round cell sarcoma of the pelvis, and malignant leiomyoma of the pelvis. The most remarkable cases in this respect which I have observed are a spindle cell sarcoma of the pelvis, and a tumor of the upper jaw encroaching on the mouth, nose and orbit, both kindly referred by Dr. S. J. Mixter. The first case (No. 54) prior to the institution of toxins suffered such agony that doses of ½ to ¾ of a grain of morphine were necessary every two or three hours. During the twenty-four hours he would also receive phenacetin, aspirin, codeia, and cannabis indica. Shortly after the treatment was started only occasional small doses of morphia were necessary, some days none at all. The other case although evidently a very vascular sarcoma of the superior maxilla cannot be included in this series because no pathological report was obtained. This man, who had been accustomed to considerable doses of morphia, entirely omitted the drug after the toxins were started.

CONCLUSIONS.

1. From this critical survey it seems fair to conclude that mixed toxins of streptococcus and bacillus prodigiosus (Coley) are of value in certain cases of inoperable sarcoma.

2. The treatment of primary or recurrent inoperable sarcoma with mixed toxins must be intensive. The increment of the dose and the interval between injections requires some experience. This method of treatment is distressing and is never certain. This analysis has been undertaken, therefore, in the hope of ascertaining the types of case which offer reasonable expectation of benefit.

3. The institution of this treatment is unjustifiable in cases in which operative measures of reasonable safety offer possible hope for removal. A frank statement of the nature and the severity of reactions, and the probability of benefit should be made to the patient or some responsible person before the treatment is undertaken.

4. Seventy-three cases after most rigorous criticism have been regarded as apparent cures.

5. The small round cell type apparently offers the greatest expectation of benefit followed closely by the spindle cell type (excluding fibrosarcoma). Only a relatively small number of mixed cell type have been benefited. The use of toxins in cases with multiple melanotic growths does not seem justifiable but their use in single melanotic growths is legitimate.

6. Regarding the tissue of origin the greatest number of apparent cures have occurred in bone sarcomata (exclusive of giant cell cases) over 18% of the total number of apparent cures, with an equal division of round cell and small cell types.

7. Giant cell cases (as defined in the text) furnish about 15% of the total number of apparent cures. The records seem to justify preliminary trials of toxins in carefully chosen cases in which slowly growing tumors have ruptured more or less extensively into the soft parts rather than immediate amputation. With skilful judgment a few limbs have apparently been saved. If such treatment is practiced, the

patient should understand that amputation may ultimately be necessary, and it should not be long deferred in the advent of increased rapidity of growth, repeated hemorrhages, considerable absorption, or superimposed infection.

A small group on account of anatomical situation, viz., extensive involvement of the vertebrae, defy surgical eradication. These, I believe, should be submitted primarily to surgical attack followed immediately by toxin treatment. The records justify this practice.

8. Primary inoperable round cell sarcomata of the cervical glands compose about 10% of apparent cures.

9. Sarcomata arising from fascia and muscle, which have been apparently cured, have been situated in the lower extremity, abdominal wall, and back. They compose about 16% of the total number of apparent cures. Nine of twelve are of spindle cell type.

10. In a small number of cases the toxins produce striking relief of pain.

REFERENCES.

Coley: Annals of Surgery, 1891, xiv, 199-220.

Coley: Amer. Jour. Med. Sciences, 1893, N. S., cv, 487-511.

Coley: Amer. Jour. Med. Sciences, 1894, cviii, 50-66.

Coley: Amer. Jour. Med. Sciences, 1896, cxii, 251-281.

Coley: Johns Hopkins Hosp. Bull., 1896, vii, 157-162.

Coley: Jour. A. M. A., 1898, ii, 389-395; 456-465.

Coley: Annals of Surgery, 1907, xlv, 321-359.

Coley: BOSTON MED. AND SURG. JOUR., 1908, clviii, 175-182.

Coley: Surg., Gynec. and Obstet., 1911, xiii, 174-190.

Coley: Annals of Surgery, 1913, lviii, 97-108.

Coley: The Treatment of Malignant Inoperable Tumors, Brussels, 1914.

Coley: Annals of Surgery, 1914, lx, 537-566.

Coley: Annals of Surgery, 1914, lx, 772-774.

Barrie: Annals of Surgery, 1913, lvii.

Barrie: Surgery, Gynec. and Obstet., 1914, xix, 42-52.

Barrie: Annals of Surgery, 1915, lxi, 129-141.

Czerney: Münch. med. Wochenschrift, 1895, xlii, 833-835.

Harmer: BOSTON MED. AND SURG. JOUR., 1914, clxxi, 253-261.

Johnson: N. Y. Med. Record, 1894, xlvi, 616-617.

Moullin: Lancet, London, 1898, i, 354-359.

Shield: British Med. Jour., 1897, i, 193-194.

Thomas: BOSTON MED. AND SURG. JOUR., 1901, cxlv, 367-373.

Tosier: Vermont Med. Monthly, 1909, xv, 217-218.

Warren: BOSTON MED. AND SURG. JOUR., 1896, cxxxv, 665-667.

Whitman: Jour. Med. Research, 1914, xxix, 465-472.

Winberg: N. Y. Med. Record, 1902, lxi, 681-684.

CASE REPORTS.

These reports are arranged in groups according to anatomical situation or tissue of origin of the growths. Under these various headings the arrangement is: first, apparent cures, followed in order by cases which have been classed in Group E, Group D, Group C, Group B, and Group A. Personal cases are recorded in detail. Other cases appear in abstract. Reference to detailed reports of such cases appears in parenthesis after the case number in this series. Unless otherwise stated the number in parenthesis indicates the case number in Coley's Brussels Address. When the number is preceded by the word Table, it indicates the case number in the table at the end of Coley's Brussels Address.

INTRANASAL AND ACCESSORY SINUSES.

CASE 1. Personal Case. Referred by Dr. Scudder. Twice recurrent round cell sarcoma of antrum, ethmoid, superior maxilla, posterior septum and naso-pharynx. L. P. Italian woman of 32. House records E. S. vol. 676, p. 221; vol. 702, p. 37; vol. 716, p. 159; vol. 722, p. 57.

March 2, 1910. Operation, Dr. Scudder. Ether Resection of right superior maxilla for sarcoma of the antrum. Ethmoid cells curetted out. Frontal sinus not involved. Sphenoidal sinus opened, contained pus, curetted.

Pathological Report by Dr. James Homer Wright. Malignant Lymphoma. "Specimen consists of the greater portion of the right superior maxilla. Tumor mass fills up antrum, involves bony parts of the right side of the nasal cavity, and also appears on the outside of the bone at two points. Tumor consists of whitish translucent, moderately firm, rather homogeneous tissue. Microscopic examination (paraffin section). Tumor chiefly of cells, generally closely packed together, and a relatively small amount of stroma. Masses of cells are like large lymphocyte forms of cells found in lymphadenoid tissue. Some small lymphocytes are present. There are areas of necrosis."

Oct. 20, 1910. Operation. Dr. Scudder. Ether. Partial removal of the septum for recurrent sarcoma.

Pathological Report. (1010-69.) Dr. Whitney. Malignant lymphoma. "A few bits of tissue showing on microscopical examination growth of lymphoid cells, in places slightly elongated and spindle-shaped."

May 11, 1911. Moved to operating room. Seen by Dr. Scudder. "Radical operation with enucleation of eye intended, but impossible to pass Crile ether tube on account of obstruction. Piece of growth removed with tube, evidently sarcoma. Process had extended to left side of nose and face. Only hope lay in attack of both sides of face. Deemed inadvisable."

Pathological Report. (Pieces of tissue removed with Crile tube) (115-42) Dr. Whitney. "Round cell sarcoma. Small pieces of tissue from the nostril, showing upon microscopic examination a small round cell tissue with new-formed blood vessels and remains of small glands scattered throughout it."

May 11, 1911. Toxin treatment instituted and continued three weeks. Maximum dose 3 minims. Reactions severe. Patient followed five months outside hospital, then referred to Boston Dispensary for consolidation in right lung. Later treated at Burroughs Place Clinic, at Long Island, and at Middleboro for tuberculosis of lung.

Feb. 28, 1914. Seen at her home. Still thin but of good color, has done her own housework for the past year, and expects to be confined in a few days. Examination through nose and mouth and opening beneath right eye, which exposes whole nasopharyngeal cavity, shows no evidence of recurrence.

March 26, 1914. Normal child born March 5. Mother still well.

Nov. 2, 1914. Operation, Dr. Scudder. A skin flap swung from forehead to cover defect in cheek following operation March 2, 1910. No evidence of recurrence found at plastic operation.

Criticism. A small round cell sarcoma of the nasopharynx, nose, and left side of face after radical attack of right side. Considered inoperable. No evidence of malignant disease 3 years 5 months after toxin treatment. Recorded in Group F.

Case 2. Personal Case. Referred by Dr. H. A. Barnes. Small round cell sarcoma of antrum and ethmoid. Throat records, vol. xiii, p. 297. L. A. W., male, 55.

Oct. 14, 1910. Admitted to Ward G. For three months difficulty in breathing through nose. For two months epistaxis twice a week lasting one to six hours. For two months frontal headache, especially on the right, and nasal discharge.

Oct. 14, 1910. Operation, Dr. Barnes. Cocaine. Two large pieces of tissue snared from nose followed by profuse hemorrhage. Ether necessary to check bleeding by packing.

Pathological Report. Small round cell sarcoma. "A small piece of tissue showing upon microscopical examination a solid growth of round and slightly elongated cells infiltrating the tissue in all directions."

Nov. 28, 1910. Operation, Dr. Barnes. Ether. One and one-fourth inch incision on right side of the nose. Nasal process chiseled away and sarcomatous tissue exposed. Posterior nasal plug inserted. Mass scooped out with finger. Antrum then opened through canine fossa and found filled with growth, which was scooped and curetted out. The whole naso-antral wall was found to be destroyed. Antrum and right naris packed with gauze.

Dec. 5, 1910. Toxin treatment started and continued five and one-half months (May 23, 1911). Forty-nine injections. Maximum dose 10 minims. Reactions often severe. During this time the appearance of septum became suspicious and a small piece was removed which showed small round cell sarcoma. Toxins continued two and one-half months longer, at which time a note in the throat department states, "Nose clean; everything in fine condition." Patient had gained 25 pounds.

Dec. 12, 1911. (Seven months since toxins discontinued.) My record reads, "looks well, good weight and color. Working as janitor. No symptoms of recurrence. No evidence of same. Seen by Dr. Mosher who finds no evidence of recurrence."

Last seen Dec. 24, 1913 (two years, seven months since toxins discontinued). In excellent health, good weight and color, working steadily as janitor.

Criticism. A small round cell sarcoma of the antrum and ethmoid. Seems quite improbable that curetting eradicated such an infiltrating process, as recurrence showed. Seems fair to attribute apparent cure in part, at least, to toxins. Recorded in Group F.

Case 3. Personal Case. Referred by Dr. Crosby Greene. Large spindle cell sarcoma of ethmoid and frontal bone. L. E. F., a woman of 46. House No. 180998.

Feb. 12, 1912. Admitted to Ward G with following history: Eight years ago first noticed movable mass inside the nose, which was partially removed. Recurred one year later. At second operation (Dr. Greene) under ether a considerable quantity of tumor tissue and ethmoidal bone removed with cutting forceps. Pathological report, spindle cell sarcoma. No evidence of recurrence until last year when began to experience frontal headache and frequent epistaxis, and lately dizziness, nausea, and throbbing in head.

Feb. 12, 1912. Operation, Dr. Greene. Ether. Through an incision at side of nose and beneath eye the antrum opened. Its inner wall and middle turbinate removed. Ethmoidal region found filled with vascular growth which was evacuated with curette. A large portion of the right nasal bone was removed and cribiform plate exposed. Brain pulsation visible.

Pathological Report. No. 122-45. Spindle cell sarcoma. "A piece of growth from ethmoid showing upon microscopical examination bundles of large spindle cells interlacing irregularly. Blood vessels in many places with distinct walls."

Treatment with mixed toxins instituted in one week and continued six weeks. Reactions moderate. Maximum dose 4 minims.

Dec. 2, 1913. A letter from Dr. Greene states that one year after operation (Feb., 1913) no subjective or objective evidence of recurrence.

March 6, 1914 (two years since toxins discontinued). A letter from patient states that her health is very good and there is no indication of old trouble.

A letter received from patient May 29, 1914, states she is still in excellent health, two years, two months since treatment discontinued.

Criticism. An extensive infiltrating spindle cell sarcoma. An extensive operation by Dr. Greene. It may be argued that all of the growth was eradicated at operation. This is possible but at the time it did not seem probable. Perhaps this case should be excluded. It has been recorded in Group F.

Case 4. Personal Case. Referred by Dr. Mosher. M. L., age two. Throat records, vol. xiv, p. 245.

Dec. 3, 1910, admitted to House with history of appearance of sore in the nose accompanied by much discharge and passage of pieces of tissue. The nose appears flattened and one-fourth inch of the anterior end of the septum has disappeared. The exposed septum is much thickened. Tuberculin skin test and Wassermann test negative. December 8, specimen removed for examination.

Pathological Report by Dr. Whitney: fibroma or fibrosarcoma.

Jan. 20, 1911. Operation, Dr. Mosher. Ether. Septum and thickened ethmoidal region removed as far as possible and packed with gauze.

Jan. 24, 1911. Treatment with mixed toxins instituted and continued five months. Reactions slight, rarely severe. Maximum dose three and one-half minims.

Patient has since been seen by me with rhinologist every few months. Now two years, eleven months since toxins discontinued, there is no subjective or objective evidence of recurrence.

Jan. 29, 1915. Patient still free from recurrence. (3 years 9 months since toxins discontinued.)

Dr. Whitney kindly re-examined the sections in March, 1914, and reported, as previously, fibroma or fibrosarcoma.

Criticism. Owing to the pathological report it may be argued that this case should be excluded. It has been included because the process involved not only the septum but extended up into the ethmoid cells. Recorded in Group F.

CASE 5. (Table, Case No. 88.) Case of Dr. J. C. Whitley of St. Louis, Missouri. Sarcoma of superior maxilla, frontal sinuses and ethmoid.

Pathological Report. Spindle cell sarcoma with giant cells. Toxin treatment instituted immediately after an incomplete operation. Maximum dose, 20 minims. Remains of growth sloughed out. Patient in excellent health without signs or symptoms of recurrence two years later. Recorded in Group F.

(To be continued.)

THE STUDY OF DISTURBANCES OF THE STOMACH.

BY H. F. HEWES, M.D., BOSTON.

[From the Clinic of the Massachusetts General Hospital.]

(*Continued from page 292.*)

All physicians are familiar with the fact that stomach symptoms are perhaps the most common, at all events one of the most common, attributes of the human race. In the study of these manifold stomach conditions he must discriminate as far as possible, by his history record and physical examination, and tube examination in the cases not obviously cases of disease outside of the stomach, whether they are real stomach diseases, or part of a general condition, of debility, or nerve instability, or intestinal atony and constipation, and use the x-ray for their study where his judgment decides for it.

A third special method of investigation of much use in connection with the study of stomach cases is the examination of the feces for blood by the chemical blood test.

A constant or frequent blood finding in the feces in cases with symptoms pointing to stomach trouble is good evidence of the existence of ulcer of the stomach, or duodenum, or cancer. In some cases of duodenal ulcer it is our only means of making a definite diagnosis. Of course blood in the feces may come from hemorrhoids, or intestinal lesion, as intestinal cancer, or ulcer, or colitis. And some of these conditions may give apparent stomach symptoms. But often, as stated, this blood finding taken with other factors of the cases is of much value for the diagnosis of a stomach lesion.

This concludes the review of the methods of clinical study which are utilized in the investigation of cases with symptoms suggesting stomach trouble.

The exact method of procedure of clinical examination for diagnosis differs, of course, with individual cases.

It may happen that the first method of study, the record of symptoms as given by the patient, is sufficient for absolute diagnosis, and further investigation by special methods may be deemed unnecessary. This, for example, is the fact in some cases of bleeding ulcer having a clear record of recent vomiting of blood. Or it may be that this record with the record of physical examination gives a definite diagnosis of some disease outside the stomach, as appendicitis or tuberculosis, which may be deemed a sufficient cause of symptoms.

In all other cases, making the majority of cases with stomach symptoms, it is necessary, however, to go further and make at least a tube examination, and often an x-ray examination also. If the tube examination plus the record previously obtained makes a diagnosis, we may stop here. This is the fact in cases showing twelve-hour food stasis, for example. Such a finding means always obstruction of the pylorus, with rare exceptions due to ulcer or cancer, and often the tube examination tells which of the two, ulcer or cancer.

If with the record and tube examination, diagnosis is not clear, we may resort to x-ray examination. This may show definite evidence of disease, when tube examination is merely suggestive, or when it is entirely negative, or it may exactly locate a lesion already diagnosed by the examination.

The following records of cases taken from my own clinical records, will illustrate the method of procedure followed in the study of stomach cases, and the variation in this procedure according to the character of the particular case in hand. Special cases have been selected also to illustrate some of the most important points already reviewed in regard to the value of the various data obtained by the several methods of examination, for drawing conclusions for diagnosis.

CASE 1. R. L., age 30, Aug. 1, 1911. One week ago the patient, who had had no previous dyspepsia, began to have distress in the epigastrium, coming, perhaps one hour after meals and lasting one to two hours—there was raising of gas and sometimes sour regurgitation, but no vomiting. This has continued to the present time.

Yesterday the patient vomited a quart of red blood. The specimen was seen by her physician.

Examination: Patient rather pale. Hemoglobin, 65%. Physical examination otherwise negative. A diagnosis of bleeding ulcer of the stomach was made without further investigation. It was not considered desirable to use the tube and x-ray examination seemed unnecessary. In fact all that the tube could show would be blood, of which we had evidence in the history, and the x-ray examination would very likely show nothing, as is often the case with fresh bleeding ulcers. The feces examined on the first and second days of observation showed a strong positive blood test. This case could have been one of bleeding from esophageal varix but a diagnosis of ulcer seemed reasonable, without further investigation. The history, including as it did, one positive objective pathological finding, the blood vomited, was sufficient for the time being. The patient was given medical treatment, was apparently cured, and has had no stomach symptoms since, up to December, 1914.

Case 2. Age 60, May, 1910. Eight months ago the patient began to have a feeling of distress, and fullness, after eating, with gas and belching. This has continued since. Two months ago the patient began to vomit, at first once or twice a week but for the last two weeks almost daily, often twice a day. Some marked pain before vomiting. Vomiting occurs as a rule soon after eating. Of late the amounts vomited have been large, no blood seen. Much loss of weight and strength.

Examination: Patient thin and pale. Hemoglobin, 80%. Physical examination otherwise negative.

Tube examination: Fasting contents, 500 c.c. of thick fluid containing much food. Blood test positive. No free HCl. Test meal contents, no free HCl. Feces showed a positive blood test.

In this case the history was suggestive of a serious stomach trouble, especially the recent history, but it was not, taken alone, absolutely diagnostic of organic disease of the stomach, since we can get such a history in nerve conditions, or in disease elsewhere affecting the stomach. The recent history was strongly suggestive of stasis which means as a rule cancer or ulcer at the pylorus, but a tube examination, at least, was needed to prove the existence of this condition. Also allowing stasis, special examination was needed to discriminate between cancer and ulcer.

The tube examination here did all these things definitely. It proved stasis by the twelve-hour food residue in the fasting contents, and the absence of free HCl in the fasting and test meal contents indicated that the stasis was due to cancer rather than ulcer. The blood finding by tube and feces examination also proved the presence of organic disease.

In this case no x-ray examination was necessary for diagnosis. It might have had some value as showing the extent of the cancer, but was not needed for diagnosis. X-Ray would undoubtedly have given evidence of pyloric obstruction by cancer or ulcer, probably also would have suggested cancer rather than ulcer, if it had been done in place of the tube examination. But tube examination is more feasible ordinarily than x-ray examination and is therefore done first, often, as in this case, avoiding the expense of x-ray examination. Operation upon this case which was necessarily to relieve the stasis, if not for cure, showed cancer at the pylorus.

Case 3. R. M., age 25. For three years the patient has suffered off and on from dyspepsia. The symptoms consist of distress in the stomach, coming sometimes soon after eating, sometimes long after eating. Sometimes there is real pain. Sometimes the patient induces vomiting for relief of distress. There is no spontaneous vomiting. No history of blood at any time. If the patient is very careful she may be comfortable without much dyspepsia for months, but she has some symptoms a good part of the year.

Examination: Patient thin and very pale. Hemoglobin, 70%. Physical examination otherwise negative save for soreness and tenderness over the epigastrium.

Tube examination: Fasting contents 40 c.c. of fluid, no food, no blood. Free HCl present. Sediment shows large number of epithelial cells. Test meal contents, free HCl, 0.18%.

X-ray examination shows an irregular projection in lesser curvature, with check of peristalsis at this point, and incisura in opposite wall, peristalsis vigorous above and below area. No 6-hour residue. Sphincter and cap normal. Feces examination negative.

Here the history was suggestive of chronic stomach trouble, but, alone, justified no positive diagnosis of ulcer or cancer. The tube finding was slightly abnormal in quantity and sediment finding of fasting contents, and in high acid content of test meal contents, but did not justify a positive diagnosis of organic stomach trouble. It showed simply a hyperacidity which may mean ulcer or may not.

It was necessary here to resort to x-ray examination. This method gave a positive finding suggestive of penetrating ulcer of the lesser curvature. This finding together with the history of long continued stomach symptoms, justified a diagnosis of ulcer. Operation showed an old perforating ulcer of the lesser curvature.

In this case the x-ray finding was the really important factor for diagnosis.

Case 4. E. S., age 65. About four months ago the patient began to have fullness after eating and eructations of gas. Was more comfortable when he ate little. No record of previous stomach symptoms. This has continued and symptoms are now more marked but never very bad. No vomiting. Loss of 20 lbs. in six months. Patient feels weak and appetite very poor.

Examination: Hemoglobin, 60%. Physical examination otherwise negative.

Tube examination: Fasting contents, 20 c.c. of dark colored fluid, no food. Marked positive blood test, no free HCl. Sediment contained many broken down cells. Test meal contents. No free HCl.

X-Ray examination: Some irregularity of outline of stomach in lesser curvature. Peristalsis slightly sluggish. No 6-hour residue, sphincter and cap normal.

Feces examination showed positive blood test.

In this case the history was no way suggestive of serious stomach trouble as far as the record of symptoms of stomach trouble went. There were the symptoms which are frequently seen in cases of debility, nerve conditions, ptosis, that is, in conditions other than organic stomach disease. The only suggestive point was the persistence, and the record of loss of weight and strength. The tube finding was very suggestive of cancer of the stomach, the presence of blood and the absence of free HCl, together with the blood finding in the feces, if such findings are made on two or more separate occasions, giving us fairly positive evidence for diagnosis of cancer. An x-ray examination was desirable for possible confirmation of diagnosis made by tube finding. X-ray finding was suggestive of organic lesion of the stomach, either cancer or ulcer at the lesser curvature. The x-ray finding here was not as conclusive for diagnosis as the tube finding. If we had had the x-ray record alone we could hardly have made a positive diagnosis as the abnormality found was so slight that accident or some extraneous influence acting on the stomach could have given it, but taken with the tube finding, the x-ray finding was important.

With this evidence, a second tube examination and a second feces examination were made. Tube finding No. 2: fasting contents, 25 c. c. of reddish blood-tinged fluid. Some fresh blood was present. Feces examination No. 2 gave a positive blood test. With this record of a positive blood finding in stomach contents on two occasions, and a positive feces blood finding in two instances, together with the absence of free HCl in the test meal contents, a positive diagnosis of cancer of the stomach was made. With the x-ray evidence the cancer was located in the lesser curvature. Operation showed cancer on the lesser curvature.

In this case we needed the evidence of all methods of investigation, the most conclusive evidence being obtained by tube. I call attention to the short history of symptoms, with steady persistence after the start, in a case of fairly advanced cancer. This is not unusual.

CASE 5. O. T., age 24. Four weeks ago the patient began to notice occasional spells of pain located to the right of the navel. The pain came at any time, after a meal, or when empty. It sometimes lasted an hour or two, sometimes 15 minutes. With it has been associated some belching of gas and stomach unrest. No vomiting. This has continued off and on to the present time. In this period the patient has had several spells of weakness and vertigo when he felt as if he was going to faint. He has grown weaker, and has grown pale. Bowels regular.

Examination: Hemoglobin, 70%. Physical examination otherwise negative. No tender spots in abdomen.

Tube examination: Fasting contents, 30 c.c. of fluid. No blood test. Free HCl present. Test meal contents. Free HCl, 0.18%.

X-ray examination. Outline of stomach and duodenum normal, good sphincter and cap. Peristalsis normal.

Feces examination repeated twice always shows a blood test on a meat free diet.

Diagnosis: Bleeding in the intestinal tract, probably due to duodenal ulcer. The patient was treated medically and improved. Two months later he had another spell of weakness and blood reappeared in the feces. Operation showed a bleeding duodenal ulcer.

In this case the history was one which could go with any simple indigestion, with an appendix, a gall bladder, etc. The only really suggestive sign was the spells of faintness. Stomach examination and x-ray examination were negative. The feces examination made the diagnosis. If we had depended upon the x-ray alone in this case the disease would not have been discovered.

CASE 6. M. L. Age 40. For two years off and on the patient has been troubled with indigestion. The symptoms are nausea and distress located in the pit of stomach, sometimes pain across the abdomen in the region of the navel. The distress is apt to come two or more hours after a meal, but may come at other times. Upon two occasions there has been vomiting with the pain. He has had about five spells in two years. Between spells he may be free from trouble or have mild dyspepsia. Bowels are constipated. He uses laxatives frequently. This spell began a week ago. He has a dull pain much of the time above the navel, and nausea. He vomited once four days ago. No blood seen.

Examination: Hemoglobin, 100%. Temperature, 99.8. Pulse, 86. White count, 15,600. Marked tenderness in the right iliac fossa. No actual spasm. A diagnosis of appendicitis was made. Here the symptoms were located by the patient in the stomach. The history could go with organic stomach trouble. As general examination however located a definite disease outside of the stomach as a cause of symptoms, and no special examination by tube or x-ray was necessary. Appendicitis was found at operation.

Note that the history in this case, of intermittent attacks of stomach trouble over a long period of time, is not unlike that found frequently in cases of duodenal ulcer.

CASE 7. R. P. Age 28. For two years the patient has been subject to spells of stomach trouble, with symptoms of distress, often acute pain, coming two hours or more after eating and relieved by food. There is much gas, and heartburn, sometimes pyrosis, actual regurgitation of acid fluid. Occasionally with bad pain there has been vomiting. No blood ever seen. The vomitus has consisted of clear watery fluid without food. There have been perhaps three spells a year lasting for three weeks to two months, with periods between of complete freedom from symptoms.

Examination: Hemoglobin, 100%. Physical examination negative.

Tube examination: Fasting contents, 80 c.c. of clear fluids containing free HCl. No blood, no food. Sediment normal. Test meal contents: Free HCl, 0.26%, *i.e.* hyperacidity. Feces examination, negative.

X-ray examination: Outline of stomach and duodenum normal. Peristalsis normal. No residue.

The history of this case suggests hypersecretion or hyperacidity. It could be that of a duodenal ulcer of which hypersecretion is often an associate, or a gastric ulcer, or a simple hyperacidity, or it could have been a gall bladder or neurosis without actual hyperacidity. I have seen such histories with a normal acid content or even a low one. The tube examination proved the existence of hypersecretion and hyperacidity but it proved nothing as to whether it was a simple hyperacidity or a hypersecretion secondary to ulcer.

X-Ray examination was necessary for further light. The x-ray examination showed a normal stomach and duodenal outline and normal, though active, peristalsis. As a result of the full examination a diagnosis of hypersecretion was made. Ulcer cannot of course be absolutely ruled out by a negative x-ray in such a case, but with a clear tube finding of hypersecretion accounting for symptoms by the discovery of a well-recognized stomach disease, a negative x-ray certainly leaves this diagnosis established for the time. As a matter of fact, this case was operated upon through the advice of a surgeon in spite of the examination, and the stomach opened. No evidence of ulcer was found. I have seen many cases with an exactly similar history to this case and similar findings by tube, give an x-ray finding suggestive of duodenal ulcer, where operation has shown chronic duodenal ulcer. This case gave the symptom complex regarded by Monagan as diagnostic of duodenal ulcer.

Case 8. R. I. Age 50. For 15 years the patient has suffered off and on from attacks of stomach trouble consisted of distress, sometimes soon after food, sometimes two hours or more after eating, gas, and bloating. Vomiting was rare in the early days, but of late has been frequent. The trouble came by spells with long intervals of freedom from symptoms. About six months ago a spell began which has continued ever since. Recently vomiting has occurred daily often after each meal. Amount of vomitus sometimes large. Vomitus occasionally of dark color. There has been much loss of weight recently.

Examination: Hemoglobin, 75%. Patient very thin. Physical examination otherwise negative.

Tube examination: Fasting contents amount, 1000 c.c., much food present. Blood test faintly positive. Free HCl present. Test meal contents. Free HCl, 0.11%, *i.e.* normal acidity. Feces examination, blood test positive.

X-ray examination: In antrum and at pylorus an area of absent peristalsis, with irregular outline to shadow, sphincter absent, duodenal cap not well seen. Peristalsis above lesion normal. Large 9-hour bismuth residue.

In this case the history with its duration and record of intermittent attacks suggested chronic ulcer, finally contracting and closing the pylorus as indicated by the advent of persistent vomiting. The tube examination gave absolute evidence of stasis, that is, either cancer or ulcer at the pylorus, but as free HCl was present did not discriminate between cancer and ulcer, as in Case 2, where the absent free HCl favored cancer.

The x-ray examination was made to get evidence, if possible, for discrimination. The x-ray picture here though compatible with ulcer was more suggestive of cancer, with the irregular character of the shadow and the absence of vigorous peristalsis above the pylorus. Ulcer usually has deep and vigorous peristalsis. Cancer was found at operation.

The long history and tube examination together really favored ulcer, though one factor of the tube examination, the presence of blood, together with the blood finding in the feces was more suggestive of cancer, as constant bleeding is much more common with cancer than with chronic ulcer. The x-ray here turned the tide of diagnosis to cancer. Possibly this was a case of cancer developing on an old ulcer which would explain the combined picture, the long history of trouble, with the actual presence of cancer. One may say that an x-ray examination was not absolutely necessary in this case as the tube finding showed definitely that either cancer or ulcer at the pylorus was present and therefore that operation was necessary. Actual identification of the nature of the lesion could be made by operation better than by x-ray, but it is useful to know as much as possible about the case before operating even when operation is assured. Sometimes an x-ray indicates that cancer involvement of the stomach is so extended that operation is useless, and saves this step.

Case 9 M. L., age 30. For two years the patient has had spells of stomach trouble consisting of distress and fullness, and raising of gas soon after eating. Occasionally there has been vomiting for periods of a day or two. The patient drinks a good deal of liquor and occasionally goes on sprees. The stomach trouble is especially bad after a spree. The weight is about 20 lbs. below his best weight.

Examination: Hemoglobin, 95%. Physical examination otherwise negative.

Tube examination: Fasting contents, 60 c.c. of thick mucous fluid pouring like mucilage. No food, no blood, no free HCl. Sediment contains many epithelial cells. Test meal contents: No free HCl. Total acidity, 0.07%. Feces examination negative.

(To be continued.)

Reports of Societies.

CLINICAL CONFERENCE OF THE NEUROLOGICAL INSTITUTE, NEW YORK.

Regular Meeting, Jan. 21, 1915. Dr. J. Ramsay-Hunt in the Chair.

PLURIGLANDULAR INSUFFICIENCY OF SCLERODERMIC TYPE.

Dr. Walter Timme presented a woman fifty-five years of age, unmarried, who entered the Neurological Institute in the service of the third division on January 5, 1915, complaining of general nervousness, weakness, inability to stand or walk, and numbness and tingling of the extremities. This condition had been progressing for one and a half years, and with some slight exceptions, had been getting worse during this entire time. At the onset she first felt a numbness in her hands, and began to be clumsy in their use. She then noticed a gradually increasing weakness in her hands and arms so that she was unable to use a spade in the garden. Later, she was unable to get up from a chair or get out of a hammock. She had cramps in the calf muscles at night and some muscular pains in the thighs and legs in trying to get about. In the fall of 1913 she noticed a stiffness of the neck with pain which lasted until the spring of 1914, accompanied with difficulty in swallowing and with some inability to open her mouth as far as previously. The joints were never painful or swollen. Gradually the motion of the different members became more and more limited and she became bedridden and extremely helpless. During this time she had several falls in trying to get about and undertook osteopathic treatment for the relief of her condition with no effect. There has been some improvement in her arms, but her legs have become progressively worse. Her menstruation ceased two years ago. Her previous history gives the usual diseases of childhood. Eight years ago she had severe pain in the left elbow which was treated by osteopathy and five years ago she had a right sciatica. Syphilis is denied, there are no drug addictions, her habits are good and heredity negative. Her neurologic status upon entrance is as follows:

The patient is fairly well nourished, but presents a picture of trophic disturbances. There is some cyanosis of the extremities, her skin is dry and scaly where it is not glossy, the hair dry and lusterless, and there is a symmetrically disposed pustular eruption on the face. Upon the upper chest and neck there is an area of brownish pigmentation. In various parts of the body there are areas of induration in the skin without discoloration, and also below the skin. These are chiefly in the thighs and lower legs. The skin of the face is dry and drawn, so that it presents a mask-like appearance and offers some opposition to the full opening of the mouth. She says that there is some difficulty in opening the eyes wide. Her pulse rate is 110 and her blood pressure 160. The muscular system is practically everywhere involved atrophically. There is atrophy of the arms, forearm, and largely of the hand muscles, both flexors and extensors, together with contractures; so that she cannot extend the forearm from the arm or the hand from the forearm. In the legs and thighs similar atrophies are present, most marked in the lower legs where the calf muscles and the peronei are involved. She can lift the knees in bed only for a short distance, perhaps a foot or so, and can only slightly abduct them. She cannot sit up unassisted nor can she stand. There is some slight facial weakness on the right side, and some slight difference in the palpebral fissures. There is no myokymia, no tremor; her coördination is good.

The knee jerks upon entrance were absent, but can now occasionally be elicited. There is no Babinski, no clonus. The other reflexes are present and equal. The right pupil is slightly greater than the left but both react equally well to light and accommodation. There are no sensory changes excepting perhaps some slight diminution over the indurrated areas. There is no loss of sphincteric control. She has a chronic constipation. The thyroid is slightly enlarged but soft. Emotional control was diminished, so that she would cry at being assisted to a sitting position for fear of falling; she is irritable, finding fault with her room-mate and with the nurses without sufficient cause. X-ray examination of the left elbow joint is negative, though there is a suspicion of rarefaction in the bony structures. Electric examination of the muscles showed no R. D.; urine, blood and Wassermann are all negative.

So that we have before us a patient in the prime of life, giving evidence of a profound change in many of the tissues of a character that causes a perversion of their functional activity. The onset is concomitant with the beginning of the involutional period of life and with the cessation of menstruation. If we take the symptoms in groups we can readily see a correspondence in them with those due to defective function of various internal glandular organs—the scaly, dry skin to hypothyroidism, the pigmentation to adrenal insufficiency, the acroparesthesiae and cyanosis of the extremities to a combination of ovarian and chromaffin insufficiency. Furthermore, many of the clinical evidences seem to point to entities of which in the past we have seen examples. Thus, to mention two of the more striking ones, dystrophia muscularum progressiva and scleroderma. The patient might, with some justice, be placed in this latter class. She has the sclerodermic condition "en plaques," the mask-like face, the indurated skin and underlying masses, the atrophies and succeeding contractures and disturbances of motility, the falling out of the hair, the pigmentation, and the erythromelalgia. She has also some of the features of the ordinary muscular atrophy with the wasting of the large thigh muscles and the gradual involvement of other groups. The deep reflexes are returning, any dysphagia she might have had, had disappeared; and there is no fibrillary twitching. The age of onset is rather against this view, also the wasting of the intrinsic hand muscles. A disturbance of the internal secretions may have for its results many of the symptoms common to these disorders. Indeed Cassirer, Ballet and Delhelm and Notthaft have observed cases of progressive muscular dystrophy, scleroderma and Basedow's Disease seemingly combined in one patient, and have come to the conclusion that this incidence of all three had as a basis, a disturbance of the internal secretions. Cassirer goes even further. The disturbance of these secretions is due, according to him, and I agree thoroughly in his views, to a perversion of the function of the vegetative or autonomic nervous system. Indeed he goes to the extreme point of declaring that no one single ductless gland can be alone in its perversion, but must of necessity drag every other one into the arena; so that the various types of the tropho-neuroses assume the characteristics of the condition due to the abnormal activity of the most affected gland. If we examine these clinical types closely we will not fail to find evidences of other glandular disturbances also. And for this reason have we the nuances through which imperceptibly one disease merges into the other, as one or the other internal secretions controls the situation. In the present case, the difficulty probably began in the ovarian involution. The usual compensation for this condition is in an increase of suprarenal capsule secretion which is inhibitory to the suprarenal secretion itself. If this compensation fails, then an increased adrenal content results, with corresponding effect upon the thyroid and so a very complex picture presents itself. The reason for the assumption of an autonomic basis for this interactivity is, that after section of various of the sympathetic nerves such as the splanchnic, no complementary action results; and further, that autonomic stimulation will produce changes in the internal secretions. This patient has been for less than three weeks on ovarian extract and thyroid, and she is beginning to improve. Her pustular eruption is better, the pigmentation is less intense and she moves her arms and legs more freely than before. How far she will improve time alone can tell.

A CASE OF SUSPECTED FRONTAL NEOPLASM.

Dr J. W. Stephenson presented from the second division, a man 52 years of age who denies alcoholism, venereal disease, or other previous history of significance. No lead line on the gums. He was first seen on the ninth of January, 1915, his chief complaint being that of frontal headaches of at least six months' duration. He was mildly confused and in consequence of this confusion a detailed account of his immediate history was impossible. However, he volunteered the information that "he could not see quite so well." There was apparently general lassitude and yawning was conspicuous. Examination revealed a man of small but firm stature, confused, answering questions only in monosyllables with a husky voice. His station was unsteady, falling first to one side, then the other, gait was slow and deliberate. There was no apparent ataxia, nor could any tremors be elicited. The knee jerks were elicited only upon reinforcement, the ankle jerks were present and equal, the plantar responses were flexor, there was no clonus. The right epigastric reflex responded more promptly than the left, the abdominals were present but inactive. The eye mobility was good, there was no nystagmus. No diplopia. The pupils were irregular in outline but reacted to light, coming down slowly. Thoracic and abdominal cavities negative. No tenderness could be elicited over the skull nor was there any diffierence in the percussion note.

Patient has now been under observation for 13 days during which there has been a slow but steady progression of the mental confusion, until it is now practically impossible to get any coöperation from the patient. However he does volunteer the information that his headaches are less severe in a recumbent posture. Analgesics have been used without relief. Patient is now incontinent and uncleanly.

On January 20, physical findings were as follows: The knee jerks which were previously obtained only on reinforcement are now active, and there is a definite Babinski response on the left side, questionable on the right. The epigastric reflexes are not elicited. Pupils very slow. His confusion is decidedly more pronounced. Temperature has ranged between 98° and 99.5,° pulse between 68 and 104, the average being 88; respiration between 16 and 24, average 20; blood pressure between 135 and 150. Blood, urine and feces negative. The serum Wassermann is negative. Spinal-fluid; Wassermann is negative, three cells, considerable excess of globulin, Fehlings reduced. The eye report by Dr. Holden is as follows: "Disc outline slightly blurred, veins over-filled suggestive of beginning pappiloedema." In this connection Dr. Stephenson mentions that the observations made by him disclosed a change in the condition of the fundi after lumbar puncture; the margins of the discs being decidedly more distinct the day after the puncture. Four days after the puncture the disc showed practically the same findings as before the puncture.

I should have mentioned that the patient has had lots of trouble and worry, his wife being alcoholic, and for a long while the headaches were assumed to have been of a functional nature. There has been no vomiting but occasional nausea has been experienced.

Three possible diagnoses have been considered in this case, namely frontal neoplasm, advanced paresis and manic stupor, the latter of which could be eliminated by the presence of the Babinski phenomenon, the nature of the pupilary reflex and the condition of the discs. Advanced paresis is not an impossibility, particularly inasmuch as the ophthalmologist is not convinced that there is an actual beginning choked disc, but Dr. Stephenson considers that the changes observed in the discs before and after lumbar puncture are of great significance; also the globulin reaction was decidedly pronounced and not unlike that which is frequently observed in compressions due to spinal or cerebral neoplasm. The negative Wassermann reaction also militates against the diagnosis of paresis. There is no distinct speech defect though there was a peculiar huskiness of his voice. Test phrases were well performed when coöperation could be obtained. It is a well known fact that frontal neoplasm may exist for a long period of time without developing choked disc.

SYPHILITIC HEMIPLEGIA IN A CHILD AGED FIVE.

Dr. T. J. Keyser presented from the first division a little girl with left sided hemiplegia.

The patient was brought to the Hospital by her father January 16, 1915, complaining of headache, pain in the eyes, vomiting and paralysis of the left arm and leg. The father is being treated at present for pulmonary tuberculosis. He denies ever having had a chancre and shows no evidence of syphilis. The mother and two brothers are living and well. The patient has always been a bright, healthy child.

Four weeks ago (December 18th) the patient complained of pain in the left side of the neck. There was moderate enlargement of the glands of the neck on the left side. In a few days the pain and swelling disappeared entirely.

Three weeks ago (December 25th) she complained of general headache and pain in the eyes. These symptoms have been present almost constantly since, although less severe during the past week. Since the 25th she vomited several times each day. The vomiting occurred suddenly without nausea and was projectile in character.

One week ago (January 9th) it was noticed that the patient could not use the left hand as well as usual. This weakness gradually progressed and extended so that in three days there was complete paralysis of the left leg and arm. There is no history of convulsive attacks or mental symptoms. The temperature has been taken two or three times a day by the father and was normal throughout except on one occasion when it was 99.2°.

The patient is a bright, intelligent child, showing no evidence whatever of mental symptoms. She is well nourished and normally developed. There are no signs at all of congenital syphilis, or tuberculosis of the lungs, bones, etc. The left arm and leg are completely paralyzed. There is a moderate but distinct weakness of the left facial muscles of the supranuclear type. Otherwise the cranial nerves show no involvement whatever. The deep reflexes are all present, equal and normally active. The abdominal and epigastric reflexes are absent on the left side. Babinski sign is present and Hoffman's is at times obtained on the left side. The electrical reactions are normal and there is no stereognosis. The pupils are equal regular and react promptly. The fundi are normal and there is no restriction of the visual fields.

The temperature varies from 98° to 100,° usually being higher in the afternoon or evening. The pulse rate varies from 96-128. The blood examination shows 16,000 W. B. C. of which 79% are polymorphs. The urine is normal. Von Pirquet's cutaneous reaction negative. The cerebral spinal fluid shows 140 cells to the c. m., of which 132 are small lymphocytes. Unfortunately the Wassermann test was not done on the c. s. fluid. The serum Wassermann was positive at the Neurological Institute. A subsequent Wassermann test by the Board of Health was also strongly positive. The history of the headache and vomiting followed by the development of a hemiplegia of the cerebral type are indicative of a brain lesion. The tubercle bacillus is a possible etiological factor, indicated by the pulmonary tuberculosis of the father, the masses of lymphocytes in the spinal fluid, and the moderate evening elevation of the temperature. However, the positive Wassermann reaction together with a pleocytosis of the spinal fluid are in favor of syphilis as the probable etiological factor, in spite of the absence of all other clinical evidence of this disease. This diagnosis was later corroborated by a prompt response to antisyphilitic treatment.

Book Reviews.

Fever—Its Thermotaxis and Metabolism. By Isaac Ott, A.M., M.D. New York: Paul B. Hoeber. 1914.

The contents of this book represent three lectures, delivered before medical students. In these three lectures the author discusses fully the various aspects of fever, especially from the experimental and physiologic point of view. Ott himself has made notable researches in this subject. The work is a very complete resumé and is not at all elementary, as might be assumed from the fact that the lectures were delivered before medical students.

Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College of Philadelphia. New (15th) edition, thoroughly revised and rewritten. Octavo, 998 pages, with 144 engravings and 7 plates. Philadelphia and New York: Lea and Febiger. 1914.

The fifteenth edition of this book appears in form similar to its predecessors, although, as has been the custom of its author, the text has been liberally revised to meet the changing therapeutic outook. In this edition Dr. Hare has had the benefit of the expert knowledge of Dr. George E. deSchweinitz, Dr. Edward Martin and Dr. Barton C. Hirst in revising the sections dealing with diseases of the eye; with antiseptics; with venereal disease; and with diseases of the puerperal state respectively. In general, the volume is again decidedly to be recommended as an extremely convenient and practical treatise on therapeutics in the broad sense.

On Dreams. By Prof. Dr. Sigmund Freud. Only authorized English translation by M. D. Eder, from the second German edition. New York: Rebman Company. 1914.

This little book is not a translation of Prof. Freud's larger work, "Traumdeutung," but a brief popular account of the more essential points of his theory of dreams. A footnote on page 104, in which the translator says "the words from 'and' to 'channels' in the next sentence is a short summary of the passage in the original. As this book will be read by other than professional people the passage has not been translated, in deference to English opinion," shows that the work has been modified for popular reading, and indicates that state of mind of the public which forced Havelock Ellis to publish many of his strictly scientific studies of sexual problems in a foreign tongue.

Lead Poisoning. By Sir Thomas Oliver, M.A., M.D., M.R.C.P. New York: Paul B. Hoeber. 1914.

Sir Thomas Oliver has compressed into a small book of a little over 200 pages much information concerning lead poisoning. As is well known, he has for many years been interested in industrial diseases and the dangerous trades, in fact, long before there was any popular concern with the subject, and it is not too much to say that he is largely responsible for the increasing public interest in them. Lead poisoning is one of the most important and one of the most widespread of all the industrial diseases. The author discusses the sources of lead poisoning in the various trades, the clinical features and treatment, both preventive and curative. In an appendix are given the factory and workshop orders of the English Government. It is an important but authoritative monograph, based largely upon the writer's experience and researches.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, MARCH 4, 1915.

Editors.

Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D. } *For the Massachusetts Medical Society.*
Frederick T. Lord, M.D. }

Committee of Consulting Editors.

Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.

Edward C. Streeter, M.D., Boston, *Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 *Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager,*

126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE CLASSIFICATION AND DIAGNOSIS OF DIARRHEA IN BOTTLE-FED INFANTS.

By reason of their commonness the diarrheas of infancy constitute a subject of perennial interest, and it is highly desirable that the general practitioner should, as far as possible, be able to recognize the different varieties. All the forms are naturally more frequent in summer than in the other seasons, but all may be met with at any time of the year. The two great classes are intestinal indigestion and infectious diarrhea; and Dr. Roger H. Dennett, adjunct professor of diseases of children in the New York Post-Graduate Medical School, in a recent paper on this subject, places in a third class the miscellaneous varieties, among which are included cholera infantum (in which no bacterial micro-organism has as yet been isolated as its direct cause), Finkelstein's sugar intoxication, marasmus, diarrhea from the continued daily use of cathartics, and mechanical diarrhea due to the ingestion of some specific unfit article of food.

Dr. John Lovett Morse gave in the *American Journal of the Medical Sciences* for January an admirable exposition of the various forms of infectious diarrhea, and he divides the micro-organisms which are its primary cause into three main classes: the dysentery bacillus in all its forms, the gas bacillus and similar organisms, and thirdly, other organisms, of which the most important are streptococci, the colon bacillus, and the pyocyaneus. It is impossible to determine from the symptoms what form of organism is the cause of the disease, and there is nothing about the stools which will aid in the differentiation except, in rare instances, the peculiar green color caused by the *Bacillus pyocyaneus,* and also in cases where the streptococcus is the cause. In the former instance the green color will disappear on the addition of nitric acid, and in the latter the streptococcus, which is usually present in large numbers, can be easily recognized by the microscope.

Morse describes a simple method by which the presence or absence of the gas bacillus may be determined in from eighteen to twenty-four hours, but very properly adds the caution that in interpreting the results of the test it should be borne in mind that the presence of a few gas bacilli does not necessarily prove that they are the cause of the disease. While it is not usually difficult to differentiate between the two, the only condition with which a typical case of infectious diarrhea is likely to be confused is intussusception, although when the temperature is high and the symptoms of cerebral irritation are marked and develop before the appearance of the characteristic stools of mucus and blood, the affection may be mistaken for some form of meningitis. Here, if from the symptoms and physical signs the diagnosis is not plain, a lumbar puncture will settle it at once. In mild cases of infectious diarrhea, however, it is not infrequently difficult, if not impossible, to distinguish between this and indigestion with fermentation, and in the diagnosis the most important single symptom is no doubt the temperature curve; for while in indigestion with fermentation the elevation of temperature is either very slight or high but of short duration, in infectious diarrhea, although usually not very high, it is constant and continuous. In many instances a positive diagnosis can be made only by means of a bacteriological examination of the stools, and as regards the presence or absence of dysentery bacilli, there is unfortunately no method for determining this which does not require special media and a fairly well-equipped laboratory. Infectious diarrhea in infancy is always a serious disease, and the prognosis should, therefore, always be a guarded one.

It can readily be understood how the two forms, infectious diarrhea and intestinal indigestion, may overlap each other, as a baby with any form of indigestion is naturally more susceptible to an infection. Intestinal indigestion however, constitutes by far the largest class of infantile diarrheas, and it is met with more constantly at all seasons than the other, which is more often seen in hot weather. The subdivisions under intestinal indigestion adopted by Dennett are made upon the practical basis of the foods previously administered, though if properly interpreted, he maintains, these have a scientific basis too. Simple intestinal indigestion is caused by feeding mixtures containing more fat, sugar, proteid or starch than the infant is capable of digesting, or by feeding these elements in a form which cannot be digested, and most infants with a diarrhea due to such trouble have a combination of fat, sugar and proteid indigestion which perhaps was originally occasioned by one of these constituents only. Indigestion caused by fat is usually due to the use of top-milks or cream, although such feedings by no means necessarily cause indigestion in all infants. Sugar indigestion is caused, of course, by giving too much sugar, and gruels when given in milk and sugar mixtures, are undoubtedly a contributing factor in the causation of diarrhea in very young infants. Underfeeding includes all those cases in which sufficient food has not been given to make the infant gain, and many of these babies have a more or less severe grade of intestinal indigestion, while their "tolerance" (ability to digest and assimilate food) has been gradually reduced during the time this has lasted. Overfeeding is apt to be easier to treat if it occurs in a well-nourished child. The diagnosis of simple intestinal indigestion is not difficult. The onset is gradual and there is no fever. While the stools may vary greatly in color and consistency their odor is generally normal. There is no blood, unless this should be due to some local condition in rectum or anus, and mucus is practically always present.

The fermentative type of diarrhea is caused and aggravated by the intestinal bacteria which feed upon carbohydrates, and putrefactive diarrhea by those which feed upon protein, and the former is far more common because of the universal custom of giving a large amount of sugar to bottle-fed infants. It is easy to distinguish either of these from simple indigestion by the fact that a low grade of fever (usually from 99 to 102° F.) is present in the fermentative and putrefactive types. Much more difficulty is found in differentiating between the fermentative and the putrefactive type, a bacteriological examination of the stools not being practicable for the general practitioner. Apart from the stools, there are two main points of distinction. First, the fermentative form almost always occurs in the infant who has been fed a high sugar or starch diet, while the putrefactive is met with in infants who have been given strong milk mixtures with little or no starch in them, or in older children who are fed on a mixed diet. The second means of distinguishing between the two is the therapeutic test. A fermentative diarrhea will respond readily to a mixture made up of one-third milk and two-thirds water, the two being boiled together without sugar. In putrefactive diarrhea this treatment will be of no service, but the condition will yield to a starch diet, consisting of a thick gruel. When employing the therapeutic test Dennett states that it is usually better to give a boiled milk mixture to infants under five or six months and the gruels to those over that age, since younger infants are more liable to fermentative diarrhea and older ones to the putrefactive form. The sour odor of the stools in fermentative diarrhea is very characteristic, and the foul odor of putrefactive diarrhea (resembling that of decayed meat) is also very helpful in the differential diagnosis. Again, the reaction of the stools in fermentative diarrhea is always acid, and the acidity usually occasions inflamed buttocks and chafing, while in putrefactive diarrhea it is always alkaline, and the skin is not apt to be irritated.

◆

CARNIVOROUS AND HERBIVOROUS TYPES IN HUMAN EVOLUTION.

As a leading article in this issue of the Journal we publish the initial paper in an important piece of research by Dr. John Bryant on the carnivorous and herbivorous types in man, and the possibility and clinical utility of their recognition. It is suggested that humankind may conveniently be classified into these two animal types and that upon the basis of this classification valuable clinical differentiations may be made and practical details of hygiene, diet and medical treatment determined.

Roughly speaking, the herbivorous type is short and rotund, the carnivorous tall and lean. These superficial characteristics are paralleled, according to Dr. Bryant's elaborate tabulation, by corresponding contrasts in nearly every detail of anatomy and physiology. On these contrasts and their combinations are based the various so-called diatheses.

As a matter of fact, apart from the important possible clinical bearing of this classification, such a differentiation of human types seems equally of interest from the evolutionary point of view, since probably both types represent diverse lines of development from lower animal forms. Racially the carnivorous type is the more active, energetic and dominant; the herbivorous type more stable, artistic and contemplative. Each has the advantages and dangers of its characteristics: the herbivorous type tends to survive by virtue of its stability, the carnivorous by its superior energy and versatility. On the whole, it would appear as though in the history of the world, progress has been achieved chiefly by successive carnivorous races, which finally perish, falling victims to their inherent defects, and are replaced by the evolution of new carnivorous types from the herbivorous substratum. Probably the carnivorous type is really the superior, though it encounters peculiar perils in maintaining that superiority, and as a matter of fact it appears, certainly in the majority of American communities, that the carnivorous type predominates. This is evidenced by the rapid evolution, in the second and third generations, of carnivorous types out of immigrants of herbivorous type from European countries. Whether this is solely a result of diet or climate is not wholly clear.

Another aspect of possibly considerable significance in this consideration is that in their origin these somatic types are, to a certain extent, sex types; the fundamental feminine type is herbivorous, the fundamental masculine type is carnivorous. Whether this differentiation originally proceeded from occupation is not certain, but seems definitely likely. The man adapted to the hunt acquired height, strength and the leanness essential for speed, and thus became carnivorous; the woman, adapted to more sedentary domestic occupations, remained herbivorous. Now perhaps the most striking fact of all is, that in the course of evolution, as these types have tended to intermix between the sexes, the physical type of each sex has tended to approximate a common mean; with the progress of that form of evolution which we call civilization, the masculine type has tended to become more feminine and the feminine type more masculine. This is particularly obvious in the present day and generation to anyone thoughtfully engaged in the practice of medicine. Especially is it notable that the short, rotund, typically feminine type is disappearing before the predominance of women of the tall, slender, more masculine physique. Between the masculinized woman and the femininized man there remain, of course, fundamental skeletal and other differences, but the sex types are not so widely diverse as they probably were in remoter times.

It is, of course, impossible to foresee what may be the ultimate course of reciprocal evolution between the carnivorous and herbivorous types. Ideally it should lead to the evolution of a standard human type, in which, as the sex types approach each other, they should be mutually benefited anatomically, physiologically and intellectually. Probably such an ultimate ideal type would be largely a persistence of the carnivorous form by constant absorption from the herbivorous substratum of its mental and physical merits, without its defects. In the lower animal kingdom the ultimate dominance of the carnivore over the herbivore seems established. Such is the story of the past, as written in the chapters of biology. Such, or somewhat similar, may be expected to be the future story of man as written in the later chapters of human evolution.

* * *

OPERATION OF THE HARRISON BILL.

IN an insert in the JOURNAL for February 18 we commented editorially at length on the provisions of the new Harrison drug bill, on its relation to the medical profession, and on the duty of physicians in complying with its provisions. One important statement unintentionally omitted in this comment should be called to the attention of the profession. It is as follows:—

"While the Federal law requires the prescription to bear the date and full signature of the prescriber, Article 12 of the Regulation makes it necessary that the prescription should carry the patient's name and adress as well."

The Harrison law went into effect on Monday of this week. On or before Friday of this week, March 5, it is the further duty of every physician, if he has not already done so, to take an inventory of all opium, salts of opium, coca leaves, cocaine, alpha and beta eucaine, and preparations containing the same in his possession. This inventory must be sworn to before a justice of the peace and kept on file subject to inspection, together with the record which the law requires of all administration, dispensation or distribution of these drugs after March 1. The office of the internal revenue service of the United States Treasury Department has furfurther called attention to the following statements with reference to the operation of the Harrison law:—

"That the period for which registration must be made before March 1 is from March 1 to June 30, 1915, both dates inclusive, or one-third of the Government fiscal year.

"That the registration fee for said period is 34 cents.

"That the order blanks required under the provisions of the Act will be obtainable from the Collector at $1.00 per hundred.

"That the word 'person' as used in this Act shall be construed to mean and include a partnership, association, company or corporation as well as a natural person.

"That any person who violates or fails to comply with the requirements of the Act shall on conviction be fined not more than $2000 or be imprisoned not more than five years, or both, in the discretion of the Court."

* * *

PROMPT USE OF DIPHTHERIA ANTI-TOXIN

The Boston Board of Health has recently issued to physicians in the city a copy of its resolutions, urging the early use of diphtheria anti-toxin in all cases of proved and suspected diphtheria, without awaiting the result of bacteriologic determination. The text of the resolution is as follows:—

"At a meeting of the Board of Health held this day, the following procedure in the use of anti-toxin in the treatment of diphtheria was approved and is hereby recommended to the physicians of the city:

"That anti-toxin be used at the earliest possible moment in all cases of real and suspected diphtheria, without waiting for the bacteriological examination of cultures.

"It is further recommended to consider all cases of croupy breathing in children, which continue six hours or more, as severe cases of diphtheria, *i.e.* laryngeal diphtheria, regardless of other clinical signs or bacteriological examinations. These cases should be treated with single maximum doses of antitoxin and should be intubated within 24 hours from time of use of anti-toxin, unless marked improvement in breathing is noticed; since single maximum doses as above described are far more efficacious than repeated doses of less potency, and therefore should be given in this way, while the practice of giving repeated injections of smaller doses should be abandoned."

During the preceding week there were 47 cases and seven deaths of diphtheria in Boston. This is not an unduly large number of cases but the relatively high death-rate affords reason for again emphasizing to physicians the cardinal importance of promptness in the administration of anti-toxin to suspected cases. The Board of Health further wisely urges the administration of an immunizing dose of antitoxin to persons who have been exposed but as yet show no signs of infection.

* * *

THE FAILURE OF AN IMPORTANT BILL

In the issue of the Journal for February 11, we commented editorially on the bill then pending before the General Court providing a maximum fine of $300 for violation of regulations made by the state department of health. This bill was intended to remedy the important defect in the structure of the act establishing this new department in the failure to provide penalties for such violation. In spite of the fact that this obviously desirable bill was advocated by Dr. McLaughlin, the state health commissioner, Dr. Walter P. Bowers and other distinguished representatives of the medical profession, it was summarily defeated in the Senate on February 23 without division or debate. As a result the state department of health, though given full power to make regulations, has no authority to enforce them by the imposition of suitable penalties.

This action of the legislature is a lamentable example of the political methods whereby good reforms are frustrated of much of their benefit by refusing complete authority to those whose ability is entrusted with serious responsibilities and duties.

◆

MEDICAL SCHOOL NUMBER OF THE HARVARD ALUMNI BULLETIN

THE issue of the *Harvard Alumni Bulletin* for February 10, 1915, was published as a Medical School number and contains a large amount of material descriptive of the Harvard Medical School and its various departments of activity. There are special articles on medical education by Dr. Edward H. Bradford; on the laboratories, hospitals, libraries and museums by Dr. John B. Blake; on the history of the Medical School by Dr. Harold C. Ernst; and on its present activities and future plans by Dr. Bradford. The School for Health Officers and the Cutter Lectures are also described. This issue is of particular interest to physicians in general not only for its description of our largest New England school of medicine but also for its evidence of the progress in medical education and research, which is the peculiar property of no school, but which redounds to the benefit and advancement of the profession and of the public at large.

◆

MEDICAL NOTES

GOOD WEATHER LAST WEEK CAUSES LOW NEW YORK DEATH RATE.—During the past week 197 less deaths were reported than in the corresponding week of 1914, the rate falling from 16.52 to 14.11 per 1000 of the population. This is a decrease of 2.4 points, which is equivalent to a relative decrease of 257 deaths.

This decrease was undoubtedly due to the favorable weather conditions prevalent during the past week. In measles, scarlet fever, whooping cough and typhoid fever the percentage of decreased mortality ranged from 50 to 75%. The effect of good weather conditions was felt everywhere—diarrheal diseases, organic heart diseases, influenza, bronchitis, pneumonia, tuberculosis, Bright's disease and nephritis, all showed some decrease in the mortality rate.

The deaths of extremely young infants, that is, those under one year of age, were 68 fewer in number than in the corresponding week of 1914. Every age group showed a decreased mortality, but none as much as that of the infants. The deaths of old people, 65 years and over, were 60 fewer in number.

The mortality in the City of New York since January 1, 1915 to date has been 13.95 per 1000 of the population as against a rate of 14.85 during the corresponding period of 1914, a reduction of .9 of a point.

AWARD OF THE VIRCHOW MEDAL.—It is announced that the Rudolph Virchow Medal has been awarded by the Berlin Anthropological Society to Dr. Karl Poldt, emeritus professor of anatomy at the University of Vienna.

GOTCH MEMORIAL FUND.—An item in a recent issue of *Nature* states that the University of Oxford has recently received a fund of £550 as a memorial to Dr. Gotch late Waynefleet professor of physiology. The income of this fund is to be applied to the annual award of a Gotch memorial prize and to the creation and maintenance of a Gotch Memorial Library in the laboratory of physiology.

THE MELLON INSTITUTE.—The new building of the Mellon Institute of Industrial Research was dedicated at Pittsburgh, Pa., on February 26. The principal address was by Dr. Rossiter W. Raymond. In the evening Professor John J. Abel of Johns Hopkins University delivered the first Mellon lecture under the auspices of the Society for Biological Research on "Experimental and Chemical Studies of the Blood and Their Bearing on Medicine."

CINCINNATI MUNICIPAL HOSPITAL.—The new municipal hospital of the city of Cincinnati, Ohio, recently completed, at an estimated cost of $4,000,000, was dedicated on February 20, with appropriate exercises. The principal address was by Dr. H. S. Pritchett, chairman of the board of trustees of the Carnegie Foundation.

BUBONIC PLAGUE IN HAVANA.—Report from Washington on February 17 states that the usual methods have been adopted for dealing with the recent outbreak of cases of bubonic plague at Havana. Six additional inspectors have been ordered to be employed by the Public Health Service and an expert freight inspector has been sent from New Orleans to examine all freight cars intended for the United States, which shall be labeled and sealed after his inspection before being loaded on a ferry. All vessels from American ports are to be disinfected prior to departure.

DEDICATION OF THE PENNSYLVANIA DENTAL INSTITUTE.—On February 22, the new building of the Evans Museum and Dental Institute of the University of Pennsylvania was dedicated with appropriate ceremony. The building represents a cost of $1,000,000 and is the gift of the late Dr. Thomas W. Evans, an American Dentist who died in France in 1897.

EUGENIC LEGISLATION IN VERMONT.—A so-called eugenic marriage bill was passed to its third reading in the House of Representatives in the Vermont Legislature on February 23, requiring physical and mental examination of all applicants for marriage license.

"Applicants for licenses would be required, under the provisions of the bill, to furnish a physician's certificate that they were free from transmissible disease. Town clerks would be forbidden to issue licenses to persons of unsound mind, or to any person who was under the influence of liquor or narcotics.

"Persons seeking to evade the law by getting married in another state and then returning to Vermont to live would have their marriage declared void under one section of the bill."

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.—The annual convention of the Association of American Medical Colleges was held in Chicago on February 15, 16, and 17. At the closing session Dr. C. L. Barden of Madison, Wisconsin, was elected president for the ensuing year. Resolutions were adopted recommending that general hospitals be forbidden to exclude patients suffering with tuberculosis.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—It is announced that the 109th annual meeting of the Medical Society of the State of New York will be held in Buffalo on April 27, 28 and 29.

"Through the coöperation of the military authorities, the meeting will be held in the 65th Regiment Armory—not the old arsenal, now the City Convention Hall. This armory is one of the largest in the country and will afford accommodations for all activities of the meeting, except the annual banquet. A restaurant will be conducted in the building, there will be ample space for commercial and scientific exhibits, and an abundance of halls for general and section meetings. Even an automobile park will be provided on the armory grounds. No one need leave the building except to sleep, unless possibly to attend lectures to the laity, which will be given by prominent visiting physicians and which will probably be held in the Masten Park High School across the street.

"The choice of the armory is fortunate in another sense, as indicating the organization of the State Society as an arm of the state government. On the last night of the meeting, a regimental parade and review by Gen. Gorgas will be held."

AWARD OF THE SPINGARN MEDAL.—The first Spingarn medal has recently been awarded to Dr. Ernest Everett Just at the annual meeting of the National Association for the Advancement of Colored People.

"The Spingarn medal, which is to be awarded annually to the man or woman of African descent and American citizenship who shall have made the highest achievement during the preceding year in any field of elevated or honorable human endeavor, was given to Dr. Just for his work in physiology and in improving the standard of negro medical schools. Dr. Just, who is only 31, was graduated with the highest honors from Dartmouth in 1907, and is now head of the Department of Physiology in the Howard University Medical School. He was born in Charleston, S. C.

NATIONAL COMMITTEE FOR MENTAL HYGIENE.—The annual meeting of the National Committee for Mental Hygiene was held in New York on February 17. It was announced that several important gifts have been received for carrying on the work of the organization, $50,000 from Mrs. Elizabeth Milbank Anderson and $44,500 from Mrs. William K. Vanderbilt. The Rockefeller Foundation has also contributed for a period of years the services of Dr. Thomas W. Salmon, the medical director of the committee. Dr. Salmon's report of the past year's work dealt particularly with the surveys of conditions carried on among the insane in various parts of the country.

"These surveys, it was stated, mark the beginning of a nation-wide study by the national committee. As a part of the survey work, state societies for mental hygiene are to be organized throughout the country.

Already such agencies are at work in seven states and groups in 20 other states are preparing to organize them. It is these state societies which will carry out the plans for betterment, at the same time conducting work for feebleminded and for the prevention of nervous and mental disorders."

TRANSFER OF NEW YORK QUARANTINE SERVICE.—Report from New York on February 17 states that the committee on public health of the New York Academy of Medicine has recently forwarded to Governor Whitman a letter urging the transfer of the New York Quarantine Service from local to federal control and enclosing the report of a committee which has made a special study of the advantages that would accrue from the adoption of such a policy.

"The committee points out that the term of the present health officer of the port expires this month and that it would be an appropriate time for the Government to make the move for transferring the work to the Federal Government. The report shows that in 1913 and 1914 it cost $96,080 and $91,900 respectively more to maintain the station than the revenue derived from it."

New York and Boston remain the only two large American cities whose quarantine is still under local administration, and in each the transfer to federal control is approved by the majority of the medical profession in the interests of the public health.

Pending Tuberculosis Legislation.—It is announced by the National Association for the Study and Prevention of Tuberculosis that legislation dealing with the subject is now under consideration in 32 states of the Union.

"In 6 states—Alabama, Arizona, California, Iowa, Tennessee and Washington—bills are being considered which call for the reporting and registration of all living cases of tuberculosis. Alabama, Connecticut, Iowa, Massachusetts, Pennsylvania and the District of Columbia are working for laws which will require that consumptives who refuse to observe sanitary regulations and are a menace to others may be removed and detained in hospitals. In Alabama, Arizona, California, Illinois, Maine and Missouri, legislation permitting the establishment of county or local hospitals for tuberculosis are being discussed, and in California, Illinois, Iowa, Maine, Missouri and New Hampshire state subsidies of $3 to $5 per week per patient are being asked for such institutions. A more or less complete reorganization of the state health work is sought in several states, especially Kansas, Michigan, Minnesota, Nebraska, Texas and Arizona. In Indiana and Alabama bills providing for full-time county and city health officers are being considered.

"As an aid in furthering these and similar bills, the National Association has issued a pamphlet entitled "Tuberculosis Legislation," which contains a digest of existing laws in this field with comments and comparisons of some of the most important ones."

In Massachusetts a bill authorizing the trustees of the Boston Hospital for Consumptives to hire beds not exceeding 100 in number for tuberculosis patients in Boston until July 1, 1921, has been reported favorably by the legislative committee on public health.

European War Notes.—On Feb. 17 it was reported to the American Committee of the American Ambulance Hospital in Paris that 92% of the wounded patients thus far received in the institution have been returned to duty. The total mortality of 8% is higher than that of other field hospitals since only the graver major cases are sent to the American hospital. During December and January the hospital was occupied to 87% of its capacity. On Feb. 15 it contained a total of 290 cases. The total amount of money received by the hospital from August 1 to Jan. 1 has been approximately $440,000, of which about $120,000 was contributed by Americans resident in Europe. During the months of November, December and January the average daily cost of each patient was only $1.51, considerably lower than the rate in any New York hospital.

On Feb. 20 ten additional American Red Cross nurses sailed from New York aboard the steamship *Rochambeau*. Nine are detailed to work at Yvetot, France, and one at Paris.

On Feb. 27, the total of the New York Belgian relief fund amounted to $941,462.74; the Amercan Jewish relief fund to $494,779.43; and the American Ambulance Hospital fund to $346,451.00.

On Feb. 28, the total of the New England Belgian relief fund amounted to $223,569.04; the Massachusetts Red Cross fund to $110,636.28; the New England Jewish relief fund to $38,286.57; the Polish relief fund to $22,824.97; the New England British imperial relief fund to $21,479.86; and the Boston Russian relief fund to $10,787.00.

The Modern Hospital Purchases the "International Hospital Record.—*The International Hospital Record,* which has been published for eighteen years, has been purchased by The Modern Hospital Publishing Company of St. Louis and Chicago and will be merged with *The Modern Hospital,* beginning with the March issue. *The Modern Hospital* is a monthly magazine devoted to the building, equipment and management of hospitals, sanatoria, and kindred institutions. Recently it has opened several new departments relating to public health problems, such as "Philanthropy and the Public Health," "Prevention of Tuberculosis," "Dispensary and Out-Patient Work" and "Life Extension." The editorial offices of *The Modern Hospital* are located in Chicago and the publication offices in St. Louis.

BOSTON AND NEW ENGLAND.

Work of Maverick Dispensary.—The recently published annual report of the Maverick Dispensary of East Boston records the work of that institution for the past year. During this period 5,211 patients were treated, an increase of 41% over the previous year. The expenditures for the same period, however, were increased only 4%. The trustees make an urgent appeal for further contributions to aid the organization in its work.

Hospital Bequests.—The will of the late Laura F. Hall of Lexington, Mass., who died on February 14, was filed on February 20 at the East Cambridge Probate Court. It contains bequests of $2000 each to the New England Hospital for Women and Children and the Boston Floating Hospital.

Instructive District Nursing Association.—The annual meeting of the Boston Instructive District Nursing Association was held on Wednesday evening of last week, Feb. 24. The report of the director, Miss Mary Beard, stated that through its eight sub-stations the association during the past year has treated 13,112 patients and its nurses have made 123,065 visits. The total expenditure of the association amounted to $66,000.

TRANSFER OF PARENTAL SCHOOL BUILDINGS.—The buildings and property of the West Roxbury Parental School have been formally transferred to the trustees of the Boston City Hospital. These buildings will first be used for receiving convalescents from the South Department. They are later to be remodeled at an expected cost of $225,000, to serve as a children's hospital.

BOSTON MILK AND BABY HYGIENE ASSOCIATION.—It is stated by the Boston Milk and Baby Hygiene Association that of the 4097 babies cared for at its milk stations during 1914, over 40% were brought voluntarily by their mothers. Nurses of the Board of Health brought 18½%, physicians 13½%, milk station agencies 13%, district nurses 10%, settlements 2½% and relief agencies 1%.

ST. MONICA'S HOME.—The recently published annual report of St. Monica's Home for sick colored women and children in Roxbury, Mass., records the work and progress of this institution for the year 1914. During this period 48 new patients were admitted and a total of 65 were cared for. The principal item of interest in the report is the announcement of the acquisition by the institution of a four-story brick house adjoining its property. This building will be remodeled and connected with the present home, enabling improved accommodation for attendants and a re-arrangement of the present wards to admit a larger number of patients. For this purpose and the payment of the mortgage on the new property a sum of $6000 will be required and generous public subscriptions for this amount are earnestly solicited.

FREE PUBLIC HEALTH LECTURES.—On Wednesday of last week, Feb. 24, was given the first of a series of free public health lectures at 6 Marlborough Street, Boston, under the auspices of the committee on public health education of the American Medical Association and the department of public health of the Women's Municipal League of Boston.

The addresses at this first meeting were by Dr. Walter E. Fernald, Dr. George L. Wallace and Messrs. C. C. Carstens and James E. Fee. Dr. Fernald stated that there are 7,000 known feeble-minded persons in this state and that feeblemindedness is rapidly on the increase throughout the community. Dr. Wallace advocated the appointment of special expert health officers to detect defectives and secure their commitment to state institutions.

The other four lectures will follow on the Wednesdays in March.

MASSACHUSETTS GENERAL HOSPITAL.—The recently published 101st annual report of the Massachusetts General Hospital records the work and progress of that institution for the year 1914. During this period a total of 6712 patients were treated in the wards and 24,957 out-patients made a total of 158,000 visits, 11,000 more than in 1913. The total number of patients in the convalescent home was 681. Particular emphasis is laid on the need of the hospital for a new administration building, a private ward and a nurses' home at Waverley for the McLean Hospital. In speaking of the need of an administration building, the report says:

"The main entrance to the hospital is now at the end of the Bulfinch Building on Blossom street. It is at the extreme end of the great hospital plant, instead of in the middle, where it should be. Patients and their friends and visitors to the hospital must go through the narrow, dark and crowded corridors of the building erected 100 years ago.

"There is no suitable waiting room, no proper reception room. The business offices are much overcrowded. It is impossible to do the work of the hospital adminstration in the way that we would like to do it with the tools at our command."

Particular attention is also called to the need of hospital accommodation for persons of moderate means who are often less well cared for medically than the really poor. Of these the administrator's report further says:—

"This group in the community must often be ill in their homes, dependent upon physicians who cannot provide the necessary laboratory tests and scientific examinations which are readily available in a general hospital. I appeal to generous benefactors to help this group. I am convinced that the way to do it is to erect a hospital building for them in connection with a first-class general hospital."

EPIZOÖTIC OF FOOT AND MOUTH DISEASE.—Several new cases of foot and mouth disease have been discovered in various parts of Massachusetts during the past week. Six cases are now known to have occurred at Waltham, Mass., and several in Weston and Watertown. Two hundred infected and exposed cattle have been condemned in these three towns. On Feb. 19 cases were discovered in Lexington and Southboro, and in Lexington over 300 animals have been condemned for slaughter. Both Maine and Vermont have forbidden the shipment of livestock into their territory from Massachusetts until this recurrent epizoötic is at an end. On Feb. 20 Dr. Lester H. Howard, commissioner of animal industry, issued a statement announcing that this secondary outbreak is now well under control. This secondary epizoötic has assumed considerable proportion, 522 cattle having been infected or exposed in 15 different communities. In the first outbreak 1156 cattle were infected and 32 cities and towns were involved.

"The cities and towns in which the disease has been discovered and which have been quarantined as a result, are Worcester, Springfield, Chicopee, Waltham, Arlington, Watertown, Weston, Lexington, Northboro, Southboro, Holden, New Braintree, Oakham, and South Attleboro. Although the Department of Animal Industries has not placed a state-wide quarantine on cattle, in all of the communities which have been mentioned the commissioner has refused to allow the transportation of any cattle without a permit, which is issued only after an investigation has been made by an agent."

On Feb. 22 several cases of the disease were discovered at Middletown, R. I., where 71 animals were slaughtered. On the same day fresh centres of infection were discovered in Jefferson, Oldham ,and Bullitt Counties in Kentucky, where quarantine has been extended and 1000 cattle slaughtered. A circular letter has been issued to the county judges, urging them to call mass meetings and organize vigilance committees to combat the disease. On Feb. 23 the United States Department of Agriculture extended its quarantine over the states of Illinois, Indiana, Iowa, Michigan, New Jersey, New York, Ohio, Pennsylvania and Wisconsin.

One county in Illinois, one in New Jersey, two in New York, two in Pennsylvania, and a portion of one in Iowa were added to the closed area. All of Michigan, with the exception of three counties, recently was placed in a restricted area.

On February 24, in view of the recrudescence and progress of the epizoötic of foot and mouth disease in Massachusetts, Governor Walsh issued a formal proclamation to cattle owners in this State warning them of the imminence of a renewed declaration of universal quarantine. The text of this proclamation is as follows:—

"Whereas, the foot and mouth disease still exists among the cattle, sheep and swine of 18 states of the Union, and new cases are constantly developing in different parts of the Commonwealth; and,

"Whereas, it is proven that the contagion may be carried not only by persons and animals, but by all forms of merchandise, and therefore the livestock interests of Massachusetts will continue to be endangered until the disease is entirely eradicated from the country; and,

"Whereas, the further spread of the disease will involve large expenditures of money on the part of the state and may render necessary the destruction of large numbers of cattle, sheep and swine, together perhaps with the inauguration of a state-wide quarantine, to the serious inconvenience and loss of stock owners; and,

"Whereas, if the disease is not eradicated from the state before the season for pasturing cattle arrives, cattle owners will be subjected to additional loss from the necessity of keeping all cattle confined in buildings in the infected areas and of feeding them without resort to summer pastures;

"Now, therefore, I, David I. Walsh, Governor of the Commonwealth, do earnestly urge all stock owners to realize their responsibility in this matter and, accordingly, in their own interest as well as for the public good, to exercise more than ordinary care in looking after the welfare of their animals; for one of the most effective means of preventing the spread of this disease is the maintenance by individuals of a strict quarantine of their own premises.

"I call upon all good citizens to comply strictly with all orders and regulations of the Commonwealth's Department of Animal Industry. The department will gladly furnish stock owners with information regarding the best methods of guarding against the infection and the most effective ways of quarantining their premises."

On February 25 a case of foot and mouth disease was reported at Everett, Mass. The city was quarantined and the exposed herd of twelve cattle was slaughtered.

* * *

Miscellany.

SANITARY CONDITIONS AT THE BOSTON IMMIGRATION STATION.

The recently published report of the United States commissioner general of immigration for the fiscal year ended June 30, 1914, contains some not altogether favorable comment on sanitary conditions at the immigration station on Long Wharf, Boston.

"The medical officer in charge of the station refers in his annual report to the fact that the detention quarters and their appurtenances are kept in a mechanical state of cleanliness that never fails to elicit favorable comment from visitors. But in spite of such efforts, he adds, the partitions and ceilings, which are constructed of matched boards, 'have now finally become hopelessly infested with vermin.' Referring to the dormitories the medical officer speaks of the insanitary conditions and the efforts made to prevent morbidity among the inmates. 'For considerable periods during the past year the number of detained passengers held at the station has averaged over two hundred, and from time to time the limit of sleeping capacity has been practically reached. Catarrhal affections, bronchitis and tonsillitis, or septic sore throats, have been constantly prevalent in spite of the fact that persons showing symptoms of throat trouble are always immediately removed from the station. Slight wounds or scratches received by inmates or immigration employees working about the station almost invariably become infected. During the winter at least one probable case of typhus fever was removed from the station under circumstances pointing to possible infection in the station itself. Twice during the winter it was deemed advisable to remove all the inmates of the station to the local (municipal) quarantine station and clean them and subject their clothing to steam disinfection. In the meantime the detention quarters themselves were disinfected so far as it is possible to do so.'

"A few months ago a family of detained aliens was reported by one of the surgeons as showing 'in general' no tendency to cleanliness, with the result that their clothing had been found alive with vermin. This has caused numerous complaints on the part of other inmates trying to keep clean with our limited facilities.' Occasionally, indeed, the environment here proves to be literally intolerable.

"Such conditions can scarcely lay claim to the term civilized. What must be the impressions of our prospective citizens toward the Government that meets them with this welcome to the promised land? The Government can hardly excuse itself on the plea that the immigrants come of their own volition and not at the Government's invitation. The aliens come in good faith with the knowledge that they must pass the governmental inspection. It is through no choice of their own that they become our involuntary guests. The primary dictates of humanity point the need of radical reform in existing conditions and standards. There is no sufficient reason why Congress should not be willing to expend for the proper enforcement of the immigration laws at least the amount collected from head tax on immigrants. As a matter of fact less than half that amount is ordinarily consumed.

"The erection of a modern immigration station at the port of Boston was authorized by an act of Congress approved Feb. 23, 1909. The sum of $100,000 was appropriated, a part of which was spent for a site in East Boston. By reason of a proposed change in the harbor line the original site was exchanged for another, which involved an additional payment. In succeeding years the sum of $275,000 was added to the original appropriation, making a total of $375,000. Plans were eventually prepared. In June, 1914, somewhat over five years from the date of the authorizing act, the Government is advertising for proposals to erect the station.

"The weakness of the present medical inspection at Boston, is due to the lack of adequate provisions for making what may be called the secondary examination in the case of those individuals, who, at the primary examination, are recognized and detained as abnormal. The lack is general in its nature. There is in the first place an insufficiency of medical inspectors. Finally there are no hospital accommodations at the immigration station. It thus becomes necessary to transfer a large proportion of those cases requiring extended examination, physical or mental, to various local hospitals and to depend upon the staffs of those institutions for the actual examinations. And in spite of the various makeshifts to overcome existing handicaps, tardiness in completing the medical examination of arriving immigrants has been a subject of frequent and justifiable complaint."

MEMORIAL RESOLUTIONS.

Resolutions of the Staff of the Carney Hospital on the Death of Dr. Hasket Derby.

Resolved (1), That in the death of Dr. Hasket Derby, the Carney Hospital has lost one of the oldest members of its staff, and the founder of the eye department of the hospital, with which he was connected for 37 years;

(2) That the staff has lost a strong and loyal worker, and one who has been ever conscientious and just;

(3) That the profession has lost a distinguished and active member, a specialist from the beginning, whose good works and efforts in the cause of ophthalmology here and elsewhere have long been recognized;

(4) That Dr. Derby's many friends, while feeling keenly their loss, will recall with the deepest pleasure a pleasant companion, a man of polished manners, genial conversation and high ideals; and

(5) That these resolutions be spread upon the records and that copies of them be forwarded to Dr. Derby's family, and to the Boston Medical and Surgical Journal for publication.

(Signed) Frederick W. Johnson,
Daniel F. Mahoney,
Committee.

Resolutions of the Staff of the Carney Hospital on the Death of Dr. James G. Mumford.

Although his later work called him elsewhere, Dr. James G. Mumford was in his early professional life connected with the surgical staff of the Carney Hospital. It is fitting, therefore, that some expression of our regret be put on record. Hence, be it

Resolved (1), That in the death of Dr. James G. Mumford there passed a man whose life splendidly exemplified a spirit of rugged honesty, patient heroism and sincere devotion to his profession that has seldom been equalled and that is in every way worthy of emulation;

(2) That to us who are still in the ranks of the workers, the memory of his life should be a forceful aid in holding fast to the ideals of our profession and in enduring with courage and equanimity the burdens that life may put upon us; and

(3) That an expression of our sympathy be forwarded to Mrs. Mumford, and that these resolutions be spread on our official records and that a copy be sent to the Boston Medical and Surgical Journal.

(Signed) John T. Bottomley,
Committee.

Correspondence.

THE TREATMENT OF DRUNKARDS WHO BECOME PUBLIC CHARGES.

BOSTON, February 26, 1915.

Mr. Editor: Over 100,000 arrests for drunkenness are made in this state every year. The expense thereof to the Commonwealth must approach, if it does not exceed, a million dollars annually. For more than a century these people have been treated as criminals by arrests, fines and imprisonment. What has been the result? Aside from the temporary relief to the community, practically nothing has been gained by this mode of procedure. Few, if any, have been reformed. On the contrary character has been smirched, self respect has been destroyed, many have become social outcasts and not a few have become criminals. And the evil is steadily increasing.

In view of past experience the policy of treating inebriates as criminals has been anything but satisfactory in a sociological sense. While some of these unfortunates are mentally defective, yet all are lacking in sufficient will power, or in a disposition to resist the desire for alcohol. In other words, by the abuse of liquor, they are rendered unfit to care for themselves or their families. Somebody must do it for them. The problem is, what shall be done with drunkards who become public charges.

The most sensible scheme that has hitherto been suggested lies along the following lines. Instead of sending intoxicated persons to station houses, or jails, let them be taken to detention hospitals, which shall be a clearing house for the reception and disposal of these cases. Simple drunks may be cared for there until they are sober, when their ultimate disposal will depend upon conditions. Delirium tremens, feeble minded and insane cases are to be sent to appropriate places for treatment and control. Inebriates should remain in custody, until in the opinion of the proper authorities, they are sufficiently recovered to be entrusted in the community. On leaving an institution they should remain under supervision of the officers of the out-patient department of the reception hospital so long as may be necessary. These unfortunate victims of the drink habit should be encouraged and guided, and made to feel that there is a place for them to fill decently and well in the community, that they are neither criminals nor hopeless defectives. Through various means, not a few inebriates have been made useful citizens.

Massachusetts has wisely adopted this policy and it only remains to carry it to its full development. It has established the Norfolk State Hospital for male drunkards and drug victims. The farm consists of 1000 acres of land beautifully located about 20 miles from Boston. Buildings for accommodation of two hundred inmates have been erected and are in use. The hospital is over-crowded and should be enlarged to at least double the present capacity as soon as may be. The work now being done by Dr. Neff and his assistants justifies a liberal expenditure for the further development of the institution. More than one-third of those who have passed through this hospital have been distinctly benefited, a result that has never been obtained in this Commonwealth under any other plan.

Instead of spending their time in loafing, smoking, playing cards, billiards, etc., as was formerly the custom in retreats for inebriates, these patients are required to work at appropriate occupations under careful supervision, thereby compensating the state by so much for the expense incurred in their behalf. To complete the scheme a certain portion of their earnings should be devoted to the support of their families, or dependents.

The chief object of this note, Mr. Editor, is to call the attention of the medical profession to this admirable work and to urge its members to favor its prosecution to its fullest possible extent. No more important sociological problem faces the community today. None realize the havoc produced by the abuse of alcohol more keenly than the physician. (A medical friend once told the writer that prohibition in his town was worth a thousand dollars a year to him!) To say nothing of the economic waste, the misery and suffering, both mental and physical, of the unwise use of liquor are well known to everybody. While complete reform of the evil is not to be expected, yet much can be accomplished by well-directed efforts along rational lines. The Norfolk State Hospital offers the best opportunity for this work known to this generation. The members of the legislature should be seen personally by the physicians of the state and urged to grant the appropriations asked for by the trustees of the hospital to extend its facilities for the important work in hand. The medical profession is not backward in doing its duty by the public. Here is another opportunity to help a most worthy project.

GEORGE W. GAY, M.D.

◆

A MISAPPREHENSION CORRECTED.

BOSTON, February 23, 1915.

Mr. Editor: Although it is very repugnant to my feelings to call any public attention to troubles of my own, I feel compelled to ask your assistance in contradicting a statement which has recently been brought to my attention from several sources among the profession and the laity, viz.: that I have retired from practice and am giving up my cases to others. I feel impelled for more reasons than one, therefore, to make a somewhat public statement that there is not the slightest truth in any such report. It is neither my intention nor my wish to retire from the practice of my chosen specialty, to which I have devoted many years, while my health remains as excellent as at present, and so long as my colleagues in the profession, or patients, are kind enough to seek my counsel.

With my apologies for what seems to me a necessary encroachment on my part upon the time and the patience of yourself and your readers, I am

Very truly yours,

VINCENT Y. BOWDITCH, M.D.

◆

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE WEEK ENDING FEBRUARY 20, 1915.

CONTRIBUTIONS.

Dr. Sylvester McNamara, Brooklyn, N. Y.....	$ 5.00
Dr. J. Watanabe, Seattle, Wash..............	5.00
Anonymous—B., Pittsburg, Pa...............	30.00
The Erie County Medical Soc., Erie, Pa.......	25.00
Dr. Hugh Cabot, Boston, Mass...............	25.00
Dr. E. Evans, La Crosse, Wis................	10.00
Dr. W. J. Herrington, Bad Axe, Mich.........	10.00
Otero Co. Medical Society, La Junta, Colo....	25.00
Vermilion Co. Medical Society, Danville, Ill...	25.00
Dr. Eva Charlotte Reid, San Francisco, Cal...	5.00
Dr. Howard Carter, Webster Groves, Mo.....	5.00
Dr. G. H. Torney, Brookline, Mass...........	5.00
Dr. John B. Murphy, Chicago, Ill............	100.00
Dr. D. E. McGillivray, Port Angeles, Wash...	5.00
Dr. Charles N. Spratt, Minneapolis, Minn.....	100.00
Dr. J. M. Thorne, Pittsburg, Pa.............	5.00
Westerly Physicians' Asso., Westerly, R. I...	10.00
Dr. J. P. Long, Chicago, Ill................	1.00
Dr. Roy Sexton, Streator, Ill...............	5.00
Dr. D. E. Cornwall, St. Maries, Idaho........	5.00
Aesculapian Club of Buffalo, Buffalo, N. Y...	25.00

Pocatello Medical Society, Pocatello, Idaho..		10.00
Dr. A. R. Thomas, West Eaton, N. Y.........		5.00
Receipts for week ending Feb. 20...........		$ 446.00
Previously reported receipts.................		$3133.00
Total receipts.......................		$3579.00
Previously reported disbursements...	$3135.00	
Disbursements, week ending Feb. 20, 200 boxes food @ $2.20 per box..$	440.00	
Total disbursements......................		$3575.00
Balance		$4.00

F. F. Simpson, M.D., *Treasurer.*

APPOINTMENTS.

Dr. A. Bethe has been appointed professor of physiology at the new German University of Frankfort and *Dr. Rudolph Höber* has been appointed professor of physiology at the University of Kiel.

The following veterinarians have been appointed to constitute the staff of the New Angell Memorial Hospital for Animals: *Dr. F. J. Flanagan* of Toronto, Chicago and Philadelphia; *Dr. H. F. Dailey* of Philadelphia; and *Dr. D. L. Boulger, C. A. Boutelle* and *J. B. McDonald* of Boston.

RECENT DEATHS.

Dr. Frank Fuller, who died on February 19 in New York City, was born in Boston in 1827. He early began the study of medicine as an apprentice to Dr. Benjamin Hubbard of Plymouth, Mass., and later studied dentistry under Dr. John Gunn. He began the practise of his profession as a physician and dentist at Portsmouth, N. H., in 1860, but at the outbreak of the Civil War entered the Second New Hampshire regiment with which he went to Washington. He was soon appointed secretary and later governor of the Territory of Utah and administered its affairs throughout the war and for some time thereafter. In 1874 Dr. Fuller returned to New York where he continued to reside until his death.

Dr. Henry L. Nichols, who died recently at Sacramento, Cal., was born at Augusta, Me., in 1823. He began the practise of his profession in Augusta but removed in 1865 to Sacramento, where he served for many years as city physician. He is survived by one sister.

Dr. Chester Monroe Baker, a graduate of the Long Island College Hospital in 1896, died at his home in Hyannis, Mass., Dec. 12, 1914, aged 39 years. He was a Fellow of the Massachusetts Medical Society.

Dr. James Joseph Scannell of Brighton died at the Carney Hospital, South Boston, Mass., February 19, of pneumonia, following an operation for ulcer of the stomach. Dr. Scannell was born in Boston Sept. 28, 1875, and was a graduate of the Tufts College Medical School in 1905. He was made assistant director of the bacteriological laboratory of the City of Boston in 1910, succeeding Dr. B. L. Arms, and later became director, a position he filled at the time of his death. He was a Fellow of The Massachusetts Medical Society and of the American Medical Association. He is survived by his widow, three daughters and two sons.

Dr. Henry Cecil Haven died of heart disease at his home "Glenburnie" at Stockbridge, Mass., February 19, aged 62 years. He was born in New London, Conn., Sept. 15, 1852. He was graduated from Amherst College in 1873, and from the Harvard Medical School in 1879. He practised in Boston from 1879 to 1899, being physician to the West End Nursery and Infants' Hospital, and physician to the Children's Hospital for a part of this time. Then he removed to Stockbridge, where he has since resided. He had been a Fellow of The Massachusetts Medical Society since 1878. He married Mrs. Isabel Winthrop in 1899. She died in 1905.

Dr. David Hyslop Hayden, a Fellow of The Massachusetts Medical Society since 1869, and its librarian from 1872 to 1884, died at his home in Lynn, on February 21, aged 75 years. He graduated A.B. at Harvard in 1859 and M.D. at the same university in 1863; was assistant surgeon in the navy during the Civil War, and afterwards studied in Paris and Vienna, and then settled in practise in Boston but was obliged to retire on account of ill-health; since which time he had resided in Newport and later in Lynn. He is survived by one daughter.

Dr. Joseph Palmer Watts, a Fellow of The Massachusetts Medical Society, died at his home in Wakefield, Mass., February 18, aged 32 years. He was a graduate of the Harvard Medical School in the class of 1905.

Dr. Henry Cutler Baldwin, of Boston, died of uremia at the Massachusetts General Hospital, February 25, aged 55 years. Dr. Baldwin was born in Roxbury October 27, 1859, and was a graduate of Harvard College in the class of 1880 and of the Harvard Medical School in 1884. He was for many years physician to out-patients at the Free Hospital for Women, and later, and up to the time of his death, physician for diseases of the nervous system at the Massachusetts General Hospital. He was a member of the American Medical Association, a Fellow of The Massachusetts Medical Society, a member of the American Neurological Society, the Boston Society of Psychiatry and Neurology, The American Medical and Psychological Association, the Boston Medical Library and the Boston Society for Medical Improvement. He is survived by his widow.

Dr. Charles Osborn Tupper, who died of influenza recently at Brooklyn, N. Y., was born at Amherst, Nova Scotia, in 1862, a son of a physician. He received his medical education at the Medical College of Arcadia, Canada, and at the Jefferson Medical College, Philadelphia. He had practised his profession in New York since 1888. He is survived by his widow.

SOCIETY NOTICES.

Massachusetts Society of Examining Physicians.—A meeting will be held March 10, at Hotel Lenox. Dinner at 6.30 p.m.

Papers will be read by:

1. Dr. Rosalie S. Morton, Hon. Chairman of the Public Health Education Committee of the A. M. A. "The Effect of Industrial Strain on Working Women."
2. Dr. Richard C. Cabot. "Social Service as an Aid to the Physician."
3. Dr. J. W. Sever. "Massage and Manual Manipulation in After-Treatment of Fractures and Allied Conditions."

All members of the profession interested are invited.

J. H. Stevens, M.D., *Secretary.*

Norfolk South District Medical Society.—Meeting for Medical Improvement at United States Hotel, Boston, Thursday, March 4, 1915, at 11.30 a.m.

Reader: Dr. Oliver G. Tinkham, of Boston, Mass., for Dr. C. A. Sullivan, of South Braintree, Mass.
Subject: "Vein Infection."

F. H. Merriam, M.D., *Secretary,*
South Braintree, Mass.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Twentieth Annual Meeting of the American Laryngological, Rhinological and Otological Society held in Atlantic City, N. J., June 19 and 20, 1914. Paul B. Hoeber, 1914.

NEW WORK **JUST READY**

DISEASES OF THE

Bronchi, Lungs and Pleura

By FREDERICK T. LORD, M.D.

Instructor in Clinical Medicine, Harvard Medical School; Visiting Physician, Massachusetts General Hospital; Visiting Physician, Channing Home for Consumptives, Boston

Octavo, 606 pages, with 93 engravings and 3 colored plates. Cloth, $5.00 net.

Dr. Lord has created a thoroughly practical treatise on diseases of the respiratory organs. Current knowledge, gained from a large hospital experience and an extensive study of the literature, is presented in these pages in such form as to be of value to students and practitioners, and to provide a basis for further study or research. A number of the sections are of great interest, notably those on bronchostenosis, pulmonary abscess and gangrene, x-ray examination and radioscopic findings. Special attention has been devoted to pulmonary conditions which simulate tuberculosis and their differential diagnosis. The discussion of pneumonia, which includes immunity, metabolism, preventive inoculation and special methods of treatment (including that by immune sera) is of unusual merit. Throughout the book the pathology of the various pulmonary diseases is discussed in detail, and its bearing on diagnosis and treatment is strongly emphasized.

PHILADELPHIA
706-8-10 Sansom Street

LEA & FEBIGER

NEW YORK
2 W. Forty-Fifth Street

Bind Your Journals to Preserve Your Journals

It only costs you **$1.25 a volume** if you send them to

The Boston Medical and Surgical Journal

126 Massachusetts Avenue :-: :-: Boston, Mass.

Representatives in: Boston, New York, Philadelphia, Baltimore, Minneapolis, St. Paul

ARTHRITIS

71%
α90%
β9%

RADIUM

"STANDARD" RADIUM PREPARATIONS

"Standard" Radium preparations supplied under guarantee of a standardized Radium element content

Radium Chloride and Radium Sulphate (S.C.Co.) accepted by the Council on Pharmacy and Chemistry

"Prescription Dispensing Only"

Literature and Clinical Records on Request

Radium Chemical Company

General Offices and Laboratories:

Pittsburgh, Pa.

Benger's is the one Food which is self-digestive to any extent the physician may prescribe.

It is used mixed with fresh new milk (or milk and water) and during preparation both the Food and milk are converted into a delicious soluble cream, entirely free from rough and indigestible particles.

Benger's Food has been prescribed by the Medical Profession for 35 years.

BENGER'S Food

Reg. US. Pat. Off.

"Benger's Food has by its excellence, established a reputation of its own."
British Medical Journal
(London, Eng.)

is unequalled when the digestive system is weakened through accident, pain, or illness. Its self-digestive ability gives a wonderful scope in the treatment of all cases of impaired digestion and malnutrition, from Infancy to extreme old age.

A physician's sample, with full particulars, will be sent post free to any member of the medical profession on application to —

BENGER'S FOOD LTD., 92, WILLIAM STREET, NEW YORK.
Manufactory ——— MANCHESTER, Eng.
Branch Office ——— SYDNEY (N. S. W.) 117, Pitt Street. ——— Depots throughout Canada.

MSJ. US

HOSPITAL-ity

The convalescent eagerly awaits complete recovery—and home.

An occasional glass of Welch's—nature's pure food juice—will add a little home touch to the up-building process.

Welch's

Grape Juice

Help the patient to take away a pleasant memory of your hospital-ity, by means of Welch's Grape Juice.

It has an inimitable tart-sweet flavor—the answer to that inexpressible craving for "something." And it is absolutely pure.

Literature on request.

The Welch Grape Juice Company, Westfield, New York

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

THE BOSTON Medical and Surgical JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 10

THURSDAY, MARCH 11, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ADDRESS

SUPERSTITION AND THE DOCTOR. *By Owen Wister*, Philadelphia.

ORIGINAL ARTICLES

OBSERVATIONS UPON TEN CASES OF DIVERTICULUM OF THE BLADDER. *By Hugh Cabot, M.D.*, Boston.

SPLENIC ANEMIA WITH REPORT OF A CASE. *By P. E. Truesdale, M.D.*, Fall River, Mass.

THE STUDY OF DISTURBANCES OF THE STOMACH. *By H. F. Hewes, M. D.*, Boston.

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. *By Torr W. Harmer, M.D.*, Boston.

MEDICAL PROGRESS

PROGRESS IN BIOCHEMISTRY. *By A. Everett Austin, M.D.*, Boston.

EDITORIALS

THE QUESTION OF EARLY MARRIAGE. A NEW ERA IN CHINESE MEDICAL EDUCATION.

THE MEDICAL EXAMINATION OF TRANSPORTATION OPERATORS.

THE IMPORTANCE OF PREGNANCY CARE.

For complete table of contents, see first text page.

JUST OUT—THE NEW (2d) EDITION, GREATLY ENLARGED

Tousey's Electricity, X-Rays, and Radium

The revision for this second edition has been unusually severe in order to bring the work into accord with the great advances of the last few years. Over *100 pages of new matter* have been added, and *50 new illustrations*—such new matter as diathermy, sinusoidal currents, radiography with intensifying screens, röntgenotherapy, the Coolidge and similar röntgen tubes, Tousey's own dosage, and radium therapy.

The work is complete. You get full information on medical electricity, röntgenotherapy, radium, and phototherapy. You get, first the mechanical side—how to equip your office, the kind of apparatus to install, *how to use the apparatus*, how to *apply* every form of these agents in the diagnosis and treatment of disease. The subject of *electricity* covers 600 pages, taking up static, dynamic, electricity in man and animals, physiologic effects, electropathology, electrodes, electrodiagnosis, ionic medication, electromagnets and high-frequency currents.

Then comes *phototherapy*, followed by a section of 475 pages on the *röntgen ray*, properties, making skiagrams, fluoroscopy, and the *therapeutic application* of x-rays in every disease, giving you the exact technic, illustrated. Next the section on *radium*, covering some 50 pages, taking up radio-activity, chemic effects, physiologic effects, pathologic effects, *therapeutic application*, apparatus, dosage, technic, etc. There are 800 instructive illustrations, 19 in colors.

Octavo of 1219 pages, with 801 illustrations, 19 in colors. By SINCLAIR TOUSEY, M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York. Cloth, $7.50 net; Half Morocco, $9.00 net.

W. B. SAUNDERS COMPANY **West Washington Square, Philadelphia**

Entered at the Post-office at Boston as second-class matter

The Boston Hygienic Corset Company

Each corset carefully fitted to the individual. Durable, yet inexpensive.

59 Temple Place

Telephone, Oxford 4131

E. F. M.
SURGICAL CATGUT
INSURES
SAFETY FIRST
TO THE
SURGEON

SAFE STERILE STRONG SUPPLE CATGUT

PLAIN
CHROMIC
IODIZED

E. F. MAHADY COMPANY
Surgical and Hospital Supplies
671 BOYLSTON STREET, BOSTON, MASS.
Write for Prices and Samples

Current Literature Department

ABSTRACTORS.

LAURENCE D. CHAPIN, M.D.
REGINALD FITZ, M.D.
C. FROTHINGHAM, JR., M.D.
TORR W. HARMER, M.D.
J. B. HAWES, 2D, M.D.
FOSTER S. KELLOGG, M.D.
ROGER I. LEE, M.D.
GEO. A. LELAND, JR., M.D.
FRANCIS W. PALFREY, M.D.
EDWARD H. RISLEY, M.D.
GEORGE G. SMITH, M.D.
LESLEY H. SPOONER, M.D.
WILDER TILESTON, M.D.
EDW. L. YOUNG, JR., M.D.

MEDICINE.

CHOLESTERINEMIA IN ANEMIC STATES.

ANTONELLI (*Il Policlinico*, Aug., 1914) reports on an elaborate clinical study of ten cases of severe anemia—pernicious anemia, chlorosis, splenomegaly and hemolytic icterus. He finds that in pathological conditions of the blood there is no relation between the degree of anemia and the amount of cholesterin, either in the blood serum or in the red corpuscles. Neither is there any relation between globular resistance and cholesterinemia. The percentage of cholesterin may vary considerably, both in the serum and in the red corpuscles. [L. D. C.]

CLINICAL STUDIES IN CAFFEIN.

TAYLOR (*Arch. Int. Med.*, Dec., 1914) tested the effect of caffein in 15 cases of advanced myocardial disease. He found that in myocardial insufficiency with retained body fluid caffein caused a moderate increase in the urine output with a proportional loss of body weight, the increase reaching its maximum on the fourth day. It caused a drop in blood pressure, both systolic and diastolic, and a slight temporary rise in the pulse rate, but no permanent change in the pulse or respiration rate. A moderate relief of the cardiac symptoms was noted, but also the constant appearance of distressing nervous and gastric symptoms. The writer concludes that the clinical diuretic action of caffein may be better performed by large doses of theobromin sodium salicylate without the unpleasant side effects. [L. D. C.]

POSTANESTHETIC GLYCOSURIA.

ROSS AND HAWK (*Arch. Int. Med.*, Dec., 1914) studied the influence of diet, body temperature and purity of ether on postanesthetic glycosuria in the dog. They find that the reduction of body temperature during ether anesthesia does not of itself cause glycosuria. The reduction to a minimum of the oxygen content of the ether vapor inhaled does not cause glycosuria. Purified ether acts exactly as ordinary commercial ether (Squibb), as far as glycosuria is concerned. The inhalation of ether for two hours by dogs fed a carbohydrate-free diet was in every instance accompanied by glycosuria. When the same animals were fed a mixed diet glycosuria was not in evidence. The writers found no evidence of "emotional" glycosuria. [L. D. C.]

EFFECT OF THEOBROMIN IN A CASE OF NEPHRITIS.

CHRISTIAN (*Arch. Int. Med.*, Dec., 1914) concludes from a clinical study that so far as renal function may be judged from phenolsulphonephthalein excretion in acute experimental nephritis produced by uranium in the rabbit, there is no evidence that theobromin sodium salicylate exerts any constant beneficial action. Other evidence has shown the injurious action of theobromine sodium salicylate in shortening the life of rabbits with severe acute experimental (uranium) nephritis. These results lend further support to the view based on clinical observation that diuretics are not indicated in acute nephritis in man. [L. D. C.]

(*Continued on page iv.*)

The Boston Medical and Surgical Journal

Table of Contents

March 11, 1915

ADDRESS.

Superstition and the Doctor. *By Owen Wister*, Philadelphia 357

ORIGINAL ARTICLES

Observations Upon Ten Cases of Diverticulum of the Bladder. *By Hugh Cabot, M.D.*, Boston 365
Splenic Anemia with Report of a Case. *By P. E. Truesdale, M.D.*, Fall River, Mass. 368
The Study of Disturbances of the Stomach. *By H. F. Hewes, M.D.*, Boston. (Continued.) 370
A Study of the Efficiency of Mixed Toxins (Coley) in Inoperable Sarcoma. A Critical Analysis of 134 Microscopically-Proven Cases. *By Torr Wagner Harmer, M.D.*, Boston. (Continued.) 373

MEDICAL PROGRESS.

Progress in Biochemistry. *By A. Everett Austin, M.D.*, Boston 377

BOOK REVIEWS.

Urgent Surgery. By Félix Lejars 380

EDITORIALS.

The Question of Early Marriage 381
A New Era in Chinese Medical Education 382
The Medical Examination of Transportation Operators 384
The Importance of Pregnancy Care 385
Announcement 385
Medical Notes 386

OBITUARY.

Henry Cutler Baldwin, M.D. 388

CORRESPONDENCE.

The Labor Clean Milk Bill. *Dean S. Luce, M.D.* 390
Surgical Instruments for the European War. *James J. Putnam, M.D.* 391
A Rejoinder. *Samuel Crowell, M.D.* 391

MISCELLANY.

Work of Dr. Carrel in France 389
Coöperation of Clerical and Medical Profession 390
Belgian Physicians' Relief Fund 391
Notices, Appointments, Resignations, Recent Deaths, Books and Pamphlets Received 392

Address

SUPERSTITION AND THE DOCTOR.*

By Owen Wister, Philadelphia.

Deep down at the feet of the sky-scrapers in our cities, hordes of men crowd and pass incessantly. The intersecting streets cut slits between tall, sheer blocks of commerce, and all day long through these the traffic pours. From a top story you can watch the human specks below. Some of them hurry, some loiter, meeting and parting. They are in vehicles or afoot, they forge ahead, fall behind, keep abreast—but whatever they do, without end do they move and mingle and pass. Yet their sum is stationary, the concourse is always there. Specks join this mass and leave it on their particular orbits, but itself is a constant spectacle, down on the floor of the great stone valley between the sky-scrapers.

Constant through each year this spectacle has been constant through all the years since cities have stood upon the earth; the changing specks, the unvarying throng, the presiding walls of commerce, justice, religion. Look back across the stretching ages to the earliest day we know; two-wheeled chariots, kings, prophets, conquerors, slaves, naked athletes and painted idols—these gleam against that distant dawn, and from these the throng unbroken comes down between Grecian pillars, and Roman walls, and Gothic arches to us and our automobiles. A vast and motley panorama of change—but how deep does the change go? What things happen in our throng, unknown to London when Chaucer was there, unknown to the Rome of Caesar, or unknown six thousand years ago where Babylon's temples rose above the specks that peopled its two hundred square miles of area? Babylon's patron god was Marduk—but what new gods can change the eternal identity of the crowd, and what new variety of man has been discovered since Sargon of Akkad built sanctuaries by the river?

Ourselves—for this is exactly what we shall here attempt to consider in a certain particular light—ourselves today, together with ourselves while we were building the pyramids, and all the peoples between that time and the present—we, the human race, have not had time to change much. If this earth, our planet, has a point of view, we have been here only a day or so in her count of time. Our own records don't go back ten thousand years; to her we are newcomers; she waits to know us better before according us her intimacy. On the other hand, we regard an acquaintance who has reached the age of eighty as being very old—and in this we are perfectly right. A thousand miles is a long walk, but no distance to telegraph. And, as we can easily think of a thousand miles in these two ways at once, so for our present purpose must we think of ourselves in two ways at once—as having existed on the planet both a long while and a short while; that is our double relation to Time.

As the features and anatomy of men persist, so do the component parts of the crowd. Dissect it, take its various specks and classify them, some will be rare, some numerous, but all will be repetitions. We worship, we speak, we dress, on and on through the ages, and through the ages we govern, trade, fight, carve, build; the professions are perpetual, and since the beginning, man has but iterated and reiterated himself—only ever more and more articulately.

---

* An essay read April 29, 1912, before the College of Physicians, Philadelphia; and Dec. 14, 1914, before the Johns Hopkins Historical Society, Baltimore.

Rain, rain, go away,
Come again another day.

Have you heard something like this before? The children of England have been repeating it for no one knows how many generations. The children of Athens had their version of it before Sophocles danced at the theatre; their chant ran:—

ἐξήχετ' ὦ φιλ' ἥλιε !
Shine forth, sweet sun!

What chronicle, no matter how archaic, that does not include the priest, the soldier, the statesman, the lawyer, the doctor, the money changer, the merchant, the man of science, the scholar, the artist, the writer, the man of idleness, the man of crime? We might perchance add to these a certain eternal couple, the charlatan and the genius—the man of shams and the man of dreams—they are the chief characters in the drama of mankind, and we shall come upon them continually in this discourse; but they generally appear wearing the aspect of one of the others, and so fall not quite accurately into classification with the rest.

To see ourselves as classified dots in a procession six thousand years long is to see that our similarities to the ancients are really greater than our differences from them; and it seems that we are all about as wise and about as imbecile as we were in the days of Sargon of Akkad, and ten fools in Babylon could match any ten in America. Time has neither killed nor created anything in us. Our mental costume changes, not our mind. Behind a long series of masks, Credulity's face is identical, and we can be divided into those who believe that twice two makes four and those who believe it can make five if you find the secret. Or take the Philosopher's Stone. We smile at the fond alchemists, but in the year 1911 in these United States $77,000,000 were paid to get-rich-quick fakirs, now convicted of fraudulent use of the mails. Seventy-seven millions to fakirs who have been caught—how many millions more to those uncaught? Their schemes were far more transparent to common sense than ever Alchemy was to the mediaeval mind. But it is not alone in our crass foibles that we repeat the ancients; we are also like them in more flattering ways, and here is a subtle example. In our medical writings, delicacy leads us to avoid certain Saxon terms, and employ Latin in their stead. As we use Latin, the Latins used Greek. It is from a Roman medical treatise I take the following sentences:—

"The terms. . . are among the Greeks tolerable enough, and now in general use; for they are met with in almost all medical works and treatises; our vernacular terms are coarse, and not. . . in use among those who had a due regard to modesty in their discourse."

This was written 2000 years ago. And since I am quoting Celsus to show the ancients and ourselves identical, let me quote him again:—

"It is of importance to know whether fatigue has brought on a complaint, or thirst; whether it has been occasioned by cold, heat, or watchfulness, or by hunger. . . That which singly has not the power of exciting disturbance may, conjointly with other causes, do so in the highest degree. The man who is free from disease and vigorous. . . ought not. . . to require. . . the physician. . . He ought to vary his mode of living; sometimes to pass his time in the country, sometimes in town, but more frequently in the open fields. . . But although exercise and food be necessary, the training adopted by wrestlers is superfluous. . . because when the training is interrupted by urgent business, the system becomes depressed, and bodies brought in this way to a high condition very soon age and fall into a state of disease. (You see Celsus knew this before the careers of some of our graduate athletes led us to discover it in the last twenty years.) "But for the delicate" (continues Celsus), "in which class may be enumerated the majority of persons living in large towns, and almost all literary characters, stricter precaution is necessary, in order that they may regain by vigilance what they lose from the very nature of their constitutions, places of abode, and occupation. .. Now the chief means. . . is exercise. . . more severe with him who has been studying less hard . . . and gentle with him who is exhausted."

I suppose that many a good lesson has been learned and forgotten several times in the course of history, and that at each re-discovery our complacency has called it "modern."

This Aulus Cornelius Celsus was a blend of various capacities; he wrote, beside his medical treatise, three others, upon the military art, upon rhetoric and upon agriculture. He serves to warn us—if warning be necessary—that in dealing with the changing specks and the unchanging professions we must not be too clear-cut or too dogmatic in our classification. Michael Angelo was another blend of several capacities; it were easy to name many more. Does not every man contain all his ancestors? Most of these are silent in him. They will take their turn at speaking aloud again in the generations that spring from him. Yet here and there in our own acquaintance do we come upon these blends of capacities, these individuals in whom more than one ancestor is articulate. We know great doctors who have written famous novels; great lawyers whose dearest taste is exquisite pictures; in Boston we all know of a banker whose desire was to have been a musician, and who has consoled himself by giving a great orchestra to his city. Therefore let us emphatically recognize that many a man could have specialized variously; could have walked with credit along two or three paths, and in our sketch of the evolution of the doctor, and of the fragments into which the original prehistoric healer has been gradually split, our stress is to be laid exactly upon the multiplicity of the ego, upon the Chinese nest of characters that any one of us may well be.

We human beings remain so strange, so elusive, so inveterately beyond all logic, that self-contradiction is part of our very harmony. What do we see at the beginning of every doctor's prescription? A sort of thing that looks like an R, but this is the crumbled remnant of the symbol of Jupiter. Astrology still keeps the tip of her finger in the pie. Whatever be our gods, is there one among us who does not foster a pet private superstition tucked away in some crevice of his reason? Dinners of thirteen are seldom eaten at ease. In Baltimore two lives were lost by fire in a house whereof the street number was thirteen. Thereafter nobody would rent it until its number was changed to eleven-and-a-half. Friday is not a favorite day for starting upon a voyage, even with some landsmen. Thus, from the Crucifixion and the Last Supper do we derive not only our salvation and sacrament, but also the two curses which hover over Friday and thirteen. Scarce a week goes by but we see an acquaintance "touch wood" by way of propitiation to the unseen powers; nor is it altogether in jest that he does so; it is the ancestral impulse of magic surviving in him, although he seldom knows it is the virtue of the true cross he thus invokes. Undying is our animism, our pantheism, our "vecchia religione"; science has not killed our intuitive affinity for signs, charms, amulets and methods occult; fragments of the most ancient divination survive with rites and observances gathered from each succeeding epoch. A sick Australian native is still connected by a thread with the magician, and thus cured. "Absent treatment" is our American wireless form of this. The Italian in our slums still takes home the doctor's prescription, and, holding it, watches oil dropped in a bowl of water. As the drops float left or right, the omen declares for or against the prescription. To be sure, says some one, such puerilities are to be expected in Australia and in slums, but hardly among those who dress for dinner and have a box at the opera. Yet I know a doctor whose patient wrote to him from Bar Harbor that her pet dog had bitten her. The dog was quite well, but had it not best be killed, lest it subsequently go mad and the bite prove dangerous? The hostess we dine with may not carry a rabbit's foot, but she may likely enough gaze in a crystal ball, or possess and credit a horoscope. It is not many years since *Planchette* frightened fashionable society most agreeably, and the future is still read in the palms of many hands.

The late head of the British Museum was an ardent believer in astrology. Puerilities we may call these things, *Planchette*, the drops of oil, the crystal ball—puerile we may consider the eminent scholar in the British Museum, as well as the following extract from an important newspaper:—

"DAILY HOROSCOPE.

"'The Stars Incline, But Do Not Compel.'
"Wednesday, April 17, 1912.
"Mercury doth teach
"Subtle wit and speech.

"Under this rule astrology warns people to beware against those who use subtle arguments, hair-splitting speech and logic and specious, witty wheedling words and actions.

"It is declared also to be a day when it is well to be extremely cautious in dealing with fickle and whimsical persons and with those who change and vary in their opinions and desires.

"It is held to be an unfortunate day for indulging in caprices, moods and passions.

"Mercury in beneficent rule is said to grant keenness of perception and intuition this day, and also to enhance the originality and resourcefulness.

"Invention, science, mechanical skill, artistic crafts and processes that require deftness are said to be ruled with extraordinary power for luck this day.

"Saturn, rising over the United States at this period of new moon, does not make a fortunate aspect and afflicts particularly the east. Uranus, on the upper meridian, is held to make an influence for strange attitudes on the part of large and powerful classes, leading them into erroneous channels. It is predicted that there will be an unusual amount of political excitement and much discord among the various governing bodies.

"New York, it is stated by English astrologers, is under a rule foreboding great afflictions, depression and discord.

"There also is a sign governing the world in general, foreomening disasters at sea.*

"It is an evil lunation for rulers.

"Herbal astrology selects today as good for parsnip, dill, carraway, carrot, endive, fern, lavender, licorice, lily of the valley, hazel nut, marjoram, olive, mulberry, oats, myrtle, parsley, valerian, savory and calamint under Mercury

"It is also said that household signs are excellent for baking.

"Persons with this birth-date are ruled for success and achievement during the twelvemonth, but should beware against temptation to deceive a friend.

"Children born today are ruled under signs that are read as powerful for constructive energy and foresight in planning."

Well, what is the significance of this? The significance of such paragraphs being printed in the midst of news about Wall Street, the Republican party, and April changes in railroad timetables? One thing it points to, that the human race clings inveterately to its childhood; that Horace may be skeptical about the "Babylonian numbers," that Savonarola may condemn astrology—yet that Kepler, in spite of his great scientific genius, will, nevertheless, cast a horoscope for Wallenstein; that Harvey and Descartes may overthrow the mystic "spiritus animales," only for Animism and Vitalism to arise equally mystical, in their turn to be dispelled by modern chemistry, by Darwin, Helmholtz and Haeckel; that Swift in the eighteenth century may kill star-gazing, only for it to revive vigorously in our morning newspapers. To our childhood do we cling, indeed—but for the true moral we shall not be ready until we have done some further traveling up and down the centuries. That palmistry (to cite another instance) was known in China 3000 years before Christ, and has survived several religions and several civilizations, and still goes marching along unchanged, while Edison and Marconi and Curie flash upon us their miraculous discoveries—this is something to be taken into our intellectual account.

---

* This prediction *followed* the Titanic disaster very promptly.

Our shudderings and our mutterings are long-descended, and the quacks are almost the oldest family in the world. What the first incantation was we are not likely ever to know, but most of us are familiar with that one which is probably the latest: "There is no sin, sickness or death." Many patients have been bidden to repeat this over and over as part of the ritual of their treatment. It seems quite as sensible as a rune I used to chant once:—

Eeny, meeny, moaney, my,
Butter, leather, boaney, stry, etc.

In syllables almost identical the Celts once counted their sheep. The triangular word Abracadabra (which in Hebrew means "I bless the deed") was a respectable and established remedy for fever and ague, A.D. 212; but jargon was chattered over our ailments earlier than this. Cato the elder, that preëminent curmudgeon, who properly hated the Greeks for teaching soft vices to the Romans, and improperly hated doctors because they then all came from Greece—Cato used to practice a little surgery on his farm, about 200 B. C. When his laborers brought him their swollen joints, he would say, not

Double, double,
Toil and trouble,

but

Huat hanat
ista pista sista
damiato
damnaustra.

Whence did he derive this? Was it a little thing of his own? We must pause at this Cato for one moment; he is so like ourselves. He was a shrewd, hard-headed business man of Rome, who saw clearly that Carthage's looming commercial competition must be headed off by the destruction of that city itself; yet Cato quacked over swollen joints. I suspect he did not invent those syllables, but borrowed (or varied) something older, just as different children have different versions of Eeny, meeny, moaney, my. Listen to this:—

Shabriri
beriri
riri
ri.

That is an ancient Hebrew incantation, and here is part of one from Babylon:—

Ki
risch-ti li-bi-ki
risch-ta la li-bi-ki
la li-bi
pisch.

Thus does the incantation, jargon, quackery come trickling down the ages to us: Risch-ti la li-bi-ki, Shabiri beriri, Huat Hanat, Abracadabra eeny, meeny, there is no sin, sickness or death, do we not detect family resemblances throughout? There's rhythm, alliteration and nonsense, the very things that sensuously impress credulity. When Cato quacked over his plowboy, the plowboy felt that something potent and above his comprehension was being set in motion for him, and his sore joint, if the swelling wasn't very serious, was doubtless helped by his state of mind. We have good ground to believe that the old word quack-salver (whereof the resemblance to quicksilver is purely accidental) means him who salves, who saves, who heals by jargon, by quackery. Without scientific confirmation, I can merely venture to hazard a guess that in all these incantations a primitive germ of "suggestion" is to be found. And when the doctor writes his prescription at our bedside, don't some of us suspect a special virtue in his hieroglyphs? And don't we half nebulously imagine that if he would bestir himself and employ *all* the knowledge which hides behind his impenetrable eye, he could work real special miracles in our behalf? The power to imbue us with this mystic confidence is what we term today a good bedside manner; it is a survival of white magic, and is essential to our welfare; he whose faith in doctors is decayed is ripe prey for charlatans.

It is tempting to run riot among the strange examples of this ingrained ancestral credulity which lies in us so deep, and crops out in such protean aspect, but I will tax your patience with only two cases more, and these from personal experience. In a New England State, since Colonial times, has lived a family of natural-born bonesetters. One of these unlicensed hereditary practitioners unquestionably cured Theodosia Burr of hip trouble when the surgeons of New York had failed. Today any jury of that State will take the word of an unlicensed bonesetter against the sworn testimony of an educated, licensed physician. (There is in this a seamy side of American democracy, but I will not open that door. The bone-setting hereditary gift is a fact just as authentic as is the "jumping Frenchman" of Canada.)

In the same State, and within the sound of the whistle of the express trains between New York and Boston, a family who were suffering from anemia dug up their recently buried sister and roasted her liver to stop her from "vampiring" them. Now, at the end of the nineteenth century, for that is when my anecdote occurred, the liver of the New England Yankee woman was roasted because six or seven thousand years ago people believed that the liver was the seat of the soul. Only thus could the vampire be killed. On this liver we fly straight back from New England, through Britain, the Middle Ages, Rome, Greece, Egypt to Babylon, where we have to stop for lack of earlier records. In spite of the telephone, we resemble the mummies—the set fractures of whose bones, by the way, give proof of a clearly developed knowledge of surgery.

In the Yankee vampire, Solomon, visiting New England, would have recognized at once an old acquaintance—Lilith—although he might have to visit Borneo or Burma or Uganda, to see divination by the liver in actual practice.: In our down-town streets he would very naturally mistake our banks and stock-exchanges for temples of the gods; but wherever he went, he would hum his old maxim, that there was nothing new under the sun. Much that is done by the Hudson and Mississippi they did by Tigris and Euphrates.

In attempting to discern the silhouette of the doctor against the various receding backgrounds of history until all outlines are merged in the mist of the primeval ages, two wholly contradictory thoughts arise; one wonders how the doctor, when once he had emerged as distinctly as he did in the person of Hippocrates, should not have gone on growing ever clearer and clearer, like a photograph developing on a plate, instead of presently becoming dimmer and more dim, until he grew virtually invisible for centuries. And on the other hand, one equally wonders how the doctor ever emerged at all. He was no money changer or lawyer or merchant. He was far different; he was merged with the multitudinous and ubiquitous quack—the quack self-deceived and the quack self-confessed; he was stirred into the same cup with priests, astrologers, patron divinities, magicians, witches, prophets. Superstition held him in her hand, and closed her hand over him. Let us greatly foreshorten as we review his evolution, and from it distil morals useful for ourselves and our children.

Of course we don't know when he began. Scholars don't know, but we may all boldly guess that he began pretty soon. Somebody must have been hurt in battle or in hunting, and discovered some neighbor particularly successful in giving him relief. This must have constantly happened ages before Ea, god of light and beneficence, healed the sick and raised the dead. There would the doctor have been, already quite emerged, quite on his own feet. But the sun, rain, lightning, thunder were too much for man's imagination. Many gods, good and bad, evidently encompassed man. Religion, therefore, controlled every least act of his life, and thus we find the priest at the root of every doctor's family tree. He was at the root of many other professions besides religion and medicine; he declared the law, regulated education; he swayed armies; he ruled trade and domestic life and agriculture and migration; he was the first statesman, and his doctoring was as public an office as any of his other offices. With a proportion of truth much greater than when uttered by Louis the Fourteenth, the priest of archaic ages could have said, "L'état c'est moi." And by the time intellectual evolution had reached the stage of revealed religion, literature had appeared, and of this also the priest took control, and by this means, by the means of sacred writings, he ordered and presided over the community and became the central power of the state. The Pentateuch contains what is to us the most familiar example of these various revealed religions, and the thirteenth and fourteenth chapters of Leviticus give an admirable instance of the priest in medicine. They are a mixture of close, accurate observation on the one hand, and of incomprehensible rites on the other. "If the plague of leprosy be healed in the leper, then shall the priest command to take for him that is to be cleansed two birds alive and clean, and cedar wood, and scarlet and hyssop. And the priest shall command that one of the birds be killed in an earthen vessel over running water. And for the living bird, he shall take it, and the cedarwood and the scarlet and the hyssop, and shall dip them and the living bird in the blood of the bird that was killed over the running water. And he shall sprinkle upon him that is to be cleansed of the leprosy seven times, and shall pronounce him clean, and shall let the living bird loose into the open field." These symbolic and magical prescriptions follow upon an account of leprosy itself, containing directions about isolation and burning the patient's clothes, which are as rational today as when they were written. But from this we distil our first moral: In those ancient days the State, through the priest, regulated the practice of the healing art. The doctor's duty to the community came before his duty to the individual. That ancient relation between doctor and State will revive; is reviving.

It is from such therapeutics as Leviticus discloses (and innumerable parallels are to be found in other ancient literature, in the Vedic lore, in the Hermetic books) that we see physiology suffering a set-back—almost a strangulation—in its very cradle; a mystic. instead of a natural explanation of life gains headway; baneful, nay, frightful superstitions arise—such as a man's getting rid of his disease by transferring it to another. Naaman's leprosy clove to Gehazi by way of punishment; Death agreed to take the wife Alcestis instead of the husband Admetos; the perpetuation of these fables can be seen almost daily in our criminal courts, for, though mysticism has at last let go of the doctor, it has not relaxed hold of the patient.

The significant, nay, the enormous fact for us to realize and remember is that charms, spells and rites in all these thousands of years have never advanced. never matured, while surgery and medicine, precisely in proportion as they have shaken off the shackles of mysticism and dogma, have grown in their power to prevent and alleviate human suffering. Magic is stationary, magic hangs unchanged on a side offshoot of the great tree of evolution; it is science alone that we find in the main trunk of growth.

But, as I have said, the doctor's outline was very dim, long before and long after the date of Leviticus. He was encased in the priest, looked with the priest's eye, spoke with the priest's voice and continued to live in the nebulous clot of the supernatural that had been his birthplace. By the time we see him distinctly extricated from this, the nebulous clot has already been the parent of all varieties of "irregular" practitioners. Evidently these ancestral quacks, sorcerers, magicians, and so forth, were a class in ill repute, for we find very ancient laws forbidding people to have recourse to them. These laws were not at all based upon the idea of deception or sham, but on the belief that such people were in league with powers of evil instead of with the power of good which supported the priest or "regular" practitioner. It was a scandal to the pious when disease was for the first time roundly asserted to come not from the gods but from natural causes. The man who dared say such a thing was called an atheist; nor can we at this time quite realize the courage that such an assertion required. For during those early eras in India, or Assyria, or Egypt, or wherever, the gradual specialization of man had logically caused an equivalent specialization of gods, patron divinities multiplied, and I need only remind you that Thoth, Hermes, Apollo appear (with others) in connection with healing. But these greater personages were by no means all; the human body came to be parceled out among several dozen little gods, each with an exclusive territory, seldom bigger than the thumb joint. Whenever a man felt any pain, the divinity presiding over that particular spot was to be duly propitiated. From the cult of disease-making the belief naturally followed that illness was a devil inside the patient—and here we meet the origin of the nasty stuff our grandparents had to swallow in such quantities. In order to disgust and drive out the disease devil, large doses and monstrous compounds of dreadful taste were swallowed. We can note in this devil, too, the archaic symbol of the modern germ. Had we not been reminded by various illustrations that superstition is just as vigorous today as ever it was at any time, it would surprise us to find moving along abreast with the patron gods, a rational, concrete observation and practice. Although Tuesday and Wednesday, sacred to Mars and Mercury, were the prescribed days for blood letting, some elaborate and non-mystical surgery had come up among the Hindus, cupping was known, and, beside the setting of fractures, already mentioned, the Egyptians had specialized in ophthalmia. Nevertheless, Socrates said he owed a cock to Aesculapius; nevertheless, Aesculapius was given a supernatural origin and education, and his temples were everywhere in the Grecian world, while Melampus began with the touching advantage of having two grateful serpents lick his ears. This taught him the language of birds and beasts.

Thus we get our impression of the early life of the Healing Art: a long, a very long infancy, a long, a very long childhood, full of fairy tales. It was thousands of years old when Babylon fell, yet it had not reached adolescence. In Homer, the doctor and the surgeon had become distinct, but rites and spells and sacrifices attended their ministrations. Nevertheless, the Trojan war (like many wars) caused an advance, both in practice and in observation, and so we reach a great milestone, 460 B.C.

Certain patches along the road of history blaze with light, while the stretches in between them look dull. One of these bright patches is a certain half-century in Greece, and the light from it to this day helps us to read many things. It would almost seem as if, flowing loosely and indefinitely about over our planet, were certain fertilizing forces of intellect, generally manifest in an average way, one century being usually as productive as another. But sometimes these forces seem to collect and glow as one for a while, emitting a lustrous and ineffable radiance. Thus, when the lamps of poetry, architecture, sculpture and philosophy were blazing in Greece as they have never simultaneously blazed since, it is natural that the lamp of medicine should also suddenly burn with a perfectly new light.

What makes Hippocrates illustrious along with his contemporaries Aeschylus and Plato and the rest, is not his intelligent molding into a system what the past—and especially the Pythagoreans—had indiscriminately handed to him—though this alone would have been a signal achievement. It took a fine mind to be the first to say:—

"Art is long, life is short, the occasion sudden. . . Experiment is indeterminate, generalization hazardous. . . Not only the doctor must do his part, but the patient as well, and the servants. . . For desperate cases desperate remedies. . . Whatever in connection with my professional practice. . . I see or hear. . . which ought not to be spoken of. . . I will not divulge." Thus speaks Hippocrates. It took a fine mind and a fine nature to utter such words. But it is not for this that Hippocrates is styled the father of medicine; it is because he dared to say that diseases came from natural causes, and not from the gods: Hippocrates walked out of the temple and sat down in his office. With that courageous act of deliberate self-conscious secularization the doctor's outline becomes at last distinct; he has emerged from Superstition and taken his place in Science.

Here is an epoch, indeed, in the psychic experience of mankind. It is as momentous as the discovery of Columbus, or the Reformation.

When Hippocrates dared to prove that epilepsy was not sent by the gods, the snapping of the bands of superstition made a sound that passed forward through ages, to be echoed back by Pasteur and Lister. Let it be repeated, we can hardly imagine the courage of such an act. Among the present company there may be those who, at one time or another, in upholding some principle, have run counter to the general convention of their friends, but theirs has been an adventure quite mild compared to that of Hippocrates. Is there a man here who has known what it is to stand alone and deny publicly by preaching and by practice some universally held political or religious belief? Attack the right of private property; many will be against you, but you will find fellow revolutionists. Declare that the story of the birth of Minerva is not a whit more mythological than what is asserted in the Nicene creed. . . you will shock some people, but by no means everybody. There is not in any American city at this moment one single social, political or religious belief that is shared and venerated by the community as a whole. Probably but once in the whole history of this country has a man known something similar to the experience of Hippocrates, and that was Garrison, when in 1830 he declared that slavery must be abolished. Yet even he was not as lonely as Hippocrates; for slavery had been already abolished in the rest of the civilized world, but all the world that Hippocrates knew believed that sickness was sent by the gods. Ah, to have uplifted your voice, and, amidst the general dissent, proclaimed a truth which goes on benefiting humanity 2400 years after you are dead—that is something to have done!

So this happened 2400 years ago. It opens the first chapter in the history of scientific medicine, and it brings our discussion again in sight of the sky-scrapers. From the age of Pericles down along the centuries to ourselves, superstition and the doctor walk as separate beings, in spite of the long eclipse which overcast the mind of Europe. Before that huge and vast barbarian darkness set in, medicine and surgery were able to advance several steps, superstition, of course, keeping pace with them—even stimulated by competition with them. Moreover, Philosophy took Medicine by the hand and led her astray; Plato and Aristotle, by their theorizing, actually beclouded much of the good Hippocrates had done. Schools arose, and controversies about methods just as bitter as today, so that when Galen appeared about five centuries later he found medicine a house divided against itself, crumbling with all sorts of fancies and futilities, and it needed his great genius merely to rebuild, let alone to extend, the foundations. But Galen inherited what Hippocrates had never known, dissection. It is said by Celsus that the surgeons of Alexandria practised vivisection on condemned criminals, Alexandria arguing that a few malefactors could be thus utilized for the benefit of mankind at large. If this ever did happen, humanity put a stop to it before long; and after humanity the church spoke, and not only vivisection but even dissection was for centuries forbidden or discredited.

Now while all this was going on in the rational department, the irrational was not idle. Amid the teeming harvest whereof Hippocrates was the earliest and splendid fruit, the ancient weeds took a new start. Astrology, which Greece transplanted from Babylon, where it flourished for public use, was by Greece converted to private use, and so passed on to Rome. Then, in transit anatomy became almost inextricably commingled with the planets, even at the very time when the human body was being rationally investigated at Alexandria 300 B. C. A custom of casting horoscopes, private and official, thence flourished uninterrupted for 1900 years, when (in the sixteenth century) astrology seriously affected trade. Furthermore, the temples of Aesculapius were not driven out of lucrative business because Hippocrates had renounced them and their works. We need only single out Alexander, the Paphlagonian. He conducted a particularly enterprising establishment, and during the plague, A.D. 166, his oracle issued a verse which was used an as amulet, and inscribed over doors. This Alexander bears a striking resemblance to some of our brothers who pass by the sky-scrapers; he was a spiritual medium; he was a blackmailer, he and his will live and prosper as long as the human race continues upon this planet.

No wonder that such a man as Galen strove to lift medicine out of the stifling tangle he found it in; no wonder that Antoninus Pius passed laws regulating the practice of medicine. And here once again our moral recurs: Ancient medicine was controlled by the priest; with Antoninus the State lays its secular authority upon it, with ourselves, more and more, the State will take measures to supervise a class of men in whose hands lies the health of the community.

The vast European darkness fell upon the glory that was Greece, and the grandeur that was Rome. Through that long night the living spark of medicine did not quite expire. The Philosopher's Stone and the Grand Elixir kept it alive. In Italy, at Salerno, it glimmered quite steadily for centuries—until Napoleon. It wandered to Damascus and Bagdad; it inspired the Byzantine school. But mostly it smouldered beneath Sorcery, Palmistry, Monasticism—in sooth, beneath an axphyxiating mysticism; and beneath mysticism it was found in the seventeenth century, scarce brighter than Hippocrates and Galen had left it. One great, courageous man in the sixteenth century—Ambrose Paré—was not mystic, and braved the faculty, and was called a quack for bandaging amputated limbs instead of pouring boiling oil over them. We meet other great names—Paracelsus, for instance—but it was Wiseman and Harvey who really turned the spark to a flame. A spark it had been since 400 B.C., 2100 years; we know the flame it is become in the last three centuries. We need not more than pronounce the names of Hunter, Jenner, Darwin, Lister, Pasteur; our story ends when medicine and surgery waked from their long sleep of superstition, and began again where Hippocrates and Galen had left off.

We have now taken a glance at the human family in a particular light, we have surveyed ourselves from sky-scrapers to Babylon, that we might be reminded how little we have changed during our brief history. We have had to skip much; we have omitted the great renaissance of witchcraft following upon the Inquisition and the Scholiasts; we have described none of the outcries invariably raised against each important advance in Science—as against every other intelligent innovation. In one of our great cities, leading citizens bitterly opposed the introduction of illuminating gas for twenty years; in the same city, leading citizens undertook to prove theoretically that if anthracite coal were carried in a railroad car instead of in a canal boat, the coal would be reduced to dust by the vibration. The Governor of a great Southern State in recent years vetoed a bill providing for compulsory medical inspection of school children. May we not hope that the time is approaching when all schools and all colleges will be subject to such inspection, and people will speak of the former unenlightened prejudice against it, just as we speak of the prejudice against vaccination and chloroform? The Russians named the first child vaccinated among them Vaccinoff; a little girl, christened Anaesthesia, thus celebrated the fact that she was the first child born under the auspices of chloroform. Such events, great and little, and such instances, all through the length of history, we have perforce omitted—but had we been able to include them all, the whole testimony from the beginning until today would but show us what has been already shown—that superstition, credulity, prejudice, are indestructible. And how, indeed, can superstition ever disappear, while the universe remains a mystery? And when shall we understand the universe? Is there a person in this room, or in the world, who can explain why sugar tastes sweet and salt does not? Or how the perfume of the rose is wafted through the air? Some men can handle bees without being stung, and some can pick up scorpions and deadly snakes unscathed. It is not done by a trick; these are authentic facts, but even the men themselves do not know what personal quality it is that they use so strangely. We do not know why the grotto at Lourdes has undeniably been able to heal the wounds of certain patients deemed incurable by regular practitioners. What, then, is there that we wholly understand? Wherever and whenever we attempt to answer the questions Why? and How? we step off at once into the vast and featureless unknown. Therefore Superstition survives, no matter what Science may achieve; and we may call the Quack a constant by-product of that eternal surrounding mystery whence Science from time to time draws a slender thread, a new clue, for the benefit of man.

What then, fellow patients, is the moral for us? Is not one moral, at any rate, that we should beware of our prejudices? Can we not imagine two Athenian ladies meeting on the day that Hippocrates made his great Declaration of Independence? Can we not fancy one lady walking up the fashionable street of Athens and meeting her friend in the fashionable Square of that classic town?

"Good afternoon, my dear friend! And who, O Penelope, is this profane upstart who would slander the immortal gods by declaring that they do not send us epilepsy?"

"I know not the fellow's name, O Parthenia! But surely he will be done to death for his great wickedness."

"Worse than wickedness, O Penelope! His shocking vulgarity."

And what, then, doctors, is the moral for you? Is it not, in one way, quite the same as it is for us—To live always with an open mind? No easy thing to do, by the way! The mystery of the hereditary natural bone-setter who was able to cure Theodosia Burr, the still greater mystery of the authentic cures at Lourdes—these and similar phenomena hold something that you may some day be able to formulate and control. During the sensation created in France by Mesmer, a committee of wise men was appointed to investigate and report upon the singular (though not wholly novel) pretensions which Mesmer had made. The wisest of them all, Benjamin Franklin, reported adversely as to the existence of the so-called mesmeric fluid, but he remained non-committal regarding the cures effected.

So much for an open mind—a passive duty. The doctor's active duty looms large. We have reminded ourselves that in the beginning of civilization he was combined in the same person with the statesman and the priest; we have seen him in the course of his evolution separate himself from the priest, and become secular. Then, in curious analogy to the archaic specialization of gods presiding over various portions of the human frame, the doctor in his turn has specialized, so that today we may say that he is divided into many fragments, one for the eyes, another for the ears and throat, and so on; yet, singularly enough, as our civilization grows increasingly complex, the doctor's path is leading him again towards a union or coöperation with the Church and the State. Once more, as of old, his duty to the community tends to come before his duty to the individual, because we are beginning to see the community's health as a unit.

Second, and only second, to a national ideal, is the nation's physical endurance and vitality and fertility. The strength of each generation's limbs, the cleanness of its blood, and the cleanness and soundness of those to whom it shall transmit life, this more and more must be the doctor's concern, must precede his consideration for the individual. We have learned to accept, with diminishing protest, that yellow poster which marks our house when it harbors some dangerous communicable disease. To "free-born Americans" of fifty years ago, this would have been intolerable. But—man's inalienable right to life, liberty, and the pursuit of happiness, does not include the right to be infectious. We shall go further than the yellow poster. There are signs of it. Disease is not communicable only, it is also transmissible. In some parts of our country the law already prohibits certain classes of criminals from parenthood. But here we graze a thing called "eugenics." Now about eugenics there is at present a deal of overdone emotion and underdone reflection. Let us (if this is yet possible to the American people) restrain ourselves from dashing down foolish and hasty laws upon our Statute books. Such laws, when enforced, often work their precise reverse. If doctors and parents will drop the old-fashioned excess of reserve, and talk sense to boys and girls privately, public school-rooms need never be an arena for this delicate topic. Fewer asylums and hospitals, fewer untimely graves—this good end will not be best accomplished by bad means, by crude legislators and crass preachers. To denounce youth as vicious when youth has merely followed the impulse of adolescence, is futile, because youth will not believe this; other and juster reasons must be given, if youth is to listen and be controlled; and any young man, properly warned and properly informed, will not be merely willing but anxious to learn from his doctor before marriage if he is fit to be a husband and father.

From the shoulders of Hippocrates upon his descendants has fallen a mantle of great courage. Not the sailor, not the soldier, no man of any kind, has given his life so freely and with such serene gallantry as has the doctor. In his search to lessen human suffering he is dying daily, quietly, without sound of trumpets and drums. Inspired with physical and moral courage—not only to brave pestilence, but also, when need be, to face violent public opinion for the sake of a great cause, this is his hereditary duty, and his destiny, noble and exalted.

Original Articles.

OBSERVATIONS UPON TEN CASES OF DIVERTICULUM OF THE BLADDER.*

BY HUGH CABOT, M.D., BOSTON.

IN 1912 I presented before this Association some observations[1] upon three cases of diverticulum of the bladder and I desire now to add to the evidence at that time put forward. The two most interesting questions in connection with these pouches are: (1) Their origin, whether congenital or acquired; and (2) their management by operation.

CLINICAL EVIDENCE BEARING UPON THE ORIGIN OF DIVERTICULA.

In the discussion in 1912 I found myself at variance with the views expressed by Dr. Chute, to the effect that these conditions were acquired rather than of congenital origin. The acquired type must obviously be due to obstruction in the urinary tract at some point below the bladder, and it behooves the advocates of the theory that they are acquired to produce evidence of obstruction as it also behooves those who hold the view that they are congenital to show that these patients are not guilty of obstruction. Upon this question I have the following evidence to submit:—

CASE 1. J. H. G., 38 years. March, 1911. Symptoms began at age of 25. Autopsy showed bilateral diverticula with dilatation of both ureters, obstructive thinning of kidney tissue. Pyelonephritis. There was no demonstrable obstruction in the urinary tract.

CASE 2. M. G., 30 years. May, 1912. Symptoms six months' duration. One diverticulum just above left ureteral orifice. Removed by operation. No urethral or prostatic obstruction. Operative recovery. Patient lost sight of.

CASE 3. L. L., 28 years. October, 1909. Known to have had cloudy urine without obvious cause for two years. One diverticulum just above right ureteral orifice. Removed by operation. No urethral or prostatic obstruction. Patient well. Clear urine 1913.

CASE 4. J. W., 29 years. June, 1913. Symptoms a year and a half. One diverticulum posterior wall of the bladder. Removed by operation. No urethral or prostatic obstruction. Good operative recovery. Patient lost sight of.

CASE 5. A. G., 59 years. August, 1913. Symptoms one year. Prostate moderately enlarged by adenomatous growth. One divertivulum just above orifice of right ureter. Operative removal of diverticulum and prostate. Slow but satisfactory convalescence. Urethral obstruction due to prostate.

CASE 6. W. R. B., 46 years. March, 1914. Cloudy urine of some years' duration. No other symptoms. Operative removal of left-sided diverticulum, into which the ureter opened. No urethral or prostatic obstruction. Patient still under observation.

CASE 7. G. B. C., 23 years. January, 1912. Symptoms two years' duration. Cystoscopy shows bilateral diverticula in neighborhood of ureteral orifices. Kidneys too far gone to permit operation. No urethral or prostatic obstruction.

---

* Read before the American Association of Genito-Urinary Surgeons at Stockbridge, Mass., in May, 1914.

[1] See JOURNAL, Vol. clxxii, p. 800.

Case 8. C. E. K., 50 years. May, 1913. Symptoms eight years. Two diverticula on right side, one above, one below ureteral orifice. Operative removal. No urethral or prostatic obstruction. Operative recovery.

Case 9. E. F. P., 50 years. March, 1914. Symptoms ten years. Seven years ago perineal prostatectomy. No relief of symptoms. Ten ounce residual continued. Two right-sided diverticula above ureteral orifice. Operative removal. Operative recovery. No urethral or prostatic obstruction. Empties bladder completely.

Case 10. A. N. B., 72 years. July, 1913. Symptoms ten years. Prostate much enlarged. Right-sided diverticulum some distance above ureteral orifice. Operative removal of prostate and diverticulum. Now empties bladder completely: Urine clear. Urethral obstruction due to prostate.

Taking these ten cases together they show an average age for the onset of symptoms of 37 years, and though it is probably fair to assume that the condition must have existed for some time before the onset of symptoms, let us assume that it did not. Only two of them showed clinical evidence of obstruction, Cases 5 and 10. Moreover, obstructive lesions of the prostate are, to say the least, not common at the age of 37, and none of these patients had any demonstrable stricture of the urethra. For the other eight cases it seems to me logically to follow that the advocates of the theory of acquisition must assume that the cause lay in fetal life and has disappeared beyond the possibility of clinical demonstration. This is, I believe, the theory of Englisch. It must, however, be admitted that a condition giving rise to sufficient obstruction to force outward all the coats of the urinary bladder, and then disappear, leaving no trace behind it, belongs in the category of the miraculous. Upon the evidence submitted, and which I have been able to collect from other sources, it seems to me far more probable that these sacculations are of congenital origin, that they may, and do, exist for years without causing symptoms which, when they appear, depend upon the advent of infection. Entire quiescence must not, however, be taken to mean that these conditions are harmless since, as is well recognized, they occur most commonly in the neighborhood of the ureteral orifices. By their presence and by their extreme likelihood of producing pressure upon the ureter, they sooner or later produce ureteral dilatation, hydronephrosis and extensive destruction of the kidney. When thus situated they are therefore always a serious menace to renal integrity and not uncommonly destroy the patient. Those cases which have been discovered early and removed have been followed by complete cure.

Operative Management. It goes, I believe, without saying, that when a diverticulum of the bladder is discovered the indications for its operative removal are clear if the condition of the patient is such as to make recovery within the bounds of probability. Two conditions in particular, apart from mere technical difficulties, will influence the result. First, the condition of the kidneys, and second, the amount of pericystitis and peri-diverticulitis, which result from long-standing infection. In Cases 1 and 7 the extent of the kidney damage was such as to constitute a positive contra-indication. Case 1 came to autopsy and Case 7 was clearly not likely to live long. A lesser degree of the same condition existed in all of the other cases except Case 3 and Case 10 and must therefore generally be reckoned with. The damage to the kidneys resulting from obstruction is not confined, in the case of unilateral diverticulum, to one side. With diverticulum there has in our cases been constantly observed very marked hypertrophy of the bladder wall, which is sufficient to increase the pressure around the ureteral orifice on the sound side and thereby increase the work and lead to dilatation of the ureter. This bilateral dilatation was demonstrated at operation in Cases 4 and 8, both of which were unilateral cases. Upon precisely what mechanism this hypertrophy depends is not to me clear, but its extensiveness I believe to be beyond question and its importance as a menace to the integrity of the kidney is certainly great. It therefore becomes extremely important to study the kidney function of these patients carefully before undertaking operation, though successful results may be obtained in patients with extremely low functions, as shown by Case 8, whose function was at no time above 10% by phthalein and whose average function was about 5%. Case 5 had a function of not over 15%, and Case 4, with a posterior wall diverticulum, a function of 25%.

Peri-Cystitis and Peri-Diverticulitis. The inflammatory reaction around these sacs is in some cases very great and has seemed to depend directly upon the duration and severity of the cystitis and diverticulitis. It not only greatly increases the difficulties of operative removal, which in all conscience are great enough in many cases, but when of severe grade and widespread, seriously compromises the future ability of the bladder to take up its function. This is aptly illustrated by Case 8, in whom the removal of the diverticula, which were extensive though unilateral, did not result in return of the contractility of the bladder. He has, during the year which has elapsed since operation, been free from his acute attacks of pyelonephritis, but his bladder still contains much residual and he is largely dependent upon a catheter. It therefore follows that the earlier these pouches are discovered and removed the greater the probability of a complete cure, such as resulted in Case 3.

Operative Technic. I believe it to be now fully demonstrated that no operation short of excision of the diverticulum can be expected to cure. Case 9 had his prostate removed years ago with great completeness but without benefit to his symptoms, as he continued to have a large and increasing residual. Once these pouches have lost their contractility and given rise to residual urine, that contractility cannot be restored by removal of an obstruction, should such exist. The lesser operations of enlargement of the orifice of the diverticulum seem to me total failures. In one of our cases, Case 8, this was tried three years before my operation, without benefit and without even stopping the progress of the symptoms.

I shall, therefore, confine this discussion to the technic of excision of the diverticulum. In all cases, no matter where situated, the operation will be facilitated by the opening of the bladder, which not only enables the surgeon to identify accurately the position of the sacs but facilitates the dissection by what might be called the bimanual method, one finger in the bladder and the other hand upon the outside. From this point on, however, the operative attack should vary according to the position of the pouch.

1. *Diverticula on the Posterior or Lateral Wall, Not in Relation to the Ureteral Orifice.*

In these cases the position of the ureter and the consequent possibility of wounding it need not be considered, and the following technic has served us well: The bladder having been opened and the finger introduced into the pouch, the bladder wall is incised freely down to the neck of the pouch, which is then circumscribed, a clamp applied to the pouch and the rest of the dissection rapidly finished. The incision in the bladder wall, though long, has not seemed to me objectionable, and it greatly facilitates speed and avoids unnecessary trauma to the surrounding tissues.

2. *Diverticula Situated in the Neighborhood of the Ureteral Orifices.*

Under these circumstances the avoidance of unnecessary damage to the ureter is of prime importance and its identification, unless aided by artificial means, is a matter of no small difficulty and considerably lengthens the time of operation. We have believed it best to isolate the ureter on one or both sides, according as the pouch was unilateral or bilateral, in the neighborhood of the iliac vessels. The ureter is then clamped lightly with a Crile clamp to prevent wound contamination by the urine, opened and a good sized gum-elastic bougie passed to the bladder and left in place. This maneuver renders the identification of the ureter easy at all times and removes the danger of its accidental incision or division. The difficulty next met with is the separation of the pouch from the surrounding tissues, to which it is generally firmly welded. It has generally seemed unwise to split the bladder wall down to the orifice, as is done in the posterior or high lateral wall cases, and particularly is this undesirable in bilateral diverticula. The separation of the sac is in some cases much facilitated by packing it with gauze, thus giving a firm mass on which to dissect and rendering the identification of the tissue easy. Our greatest difficulty has lain in the fact that these pouches are so surrounded by scar tissue and glued to everything in the neighborhood that it is by no means easy to distinguish them from other important structures, as for instance, the rectum. After the pouch has been thoroughly freed (it generally must be done with the scissors and cannot be freed by blunt dissection) it may be drawn upwards by means of a clamp and the neck of the sac freely divided. The wound thus left can generally be closed without difficulty, though in the cases situated below the ureteral orifice the adherence of the bladder wall to surrounding structures sometimes makes closure without tension difficult.

The hardest problem lies in those cases in which the orifice of the ureter has been drawn upward into the diverticulum. For these, Young some years ago suggested a technic which involved the leaving of a flap of bladder wall around the ureteral orifice, the rest of the sac having been excised. This flap was to be sutured into the defect in the bladder wall. This technic is ideal and I am glad to be able to report that I have recently carried it out without serious technical difficulties and I believe with a good result. This flap should have its base toward the median line, not only because of the probably better blood supply, but because in the majority of cases these sacs lie above, below or to the outer side, and much more rarely to the inner side of the ureter. From these anatomical peculiarities it follows that the ureter naturally tends to follow the inner side of the sac. Where this technic is to be carried out it is essential to have a guide in the ureter, but, as I have already pointed out, I believe this to be desirable in any case. Where the conditions are such that the technic of Young is impracticable and the ureter yet enters into the diverticulum, it must of course, be divided and reimplanted into the bladder wall at a point which can be reached wholly without tension. We have come to believe, largely by experience in other conditions, particularly cancer of the bladder, that the most successful implantations of the ureter are accomplished by leaving a half inch or more of the end of the ureter projecting into the bladder. The intent of this is to enable the ureter to accommodate itself to the altering conditions of the bladder and finally come to rest without tension. We have not believed that it was desirable to attach the ureter to the bladder wall by many sutures and have rarely used more than two for this purpose.

Drainage of the Ureter. The only further question is as to the desirability of providing drainage for these dilated and necessarily more or less abused ureters. In two or three cases we have placed a good-sized soft rubber catheter in the ureter, extending upward nearly to the renal pelvis, and have brought this catheter out through the suprapubic wound. The smooth convalescence of these patients suggests that this may be a desirable maneuver, and in a considerable number of cases in which constant drainage of the ureter has been employed for other reasons, no undesirable results have been seen. This I believe to be better technic than to drain the ureter through the incision made for the insertion of the guide bougie, and this incision we have always closed tightly with two layers, a technic which the dilatation of the ureter will always permit.

In conclusion I desire only to emphasize what seem to me the important points of the operative treatment of these cases: Free bladder incisions carried down to the orifice of the sac in the more accessible cases. The opening of the ureter and the placing of a guide bougie in all cases where the diverticulum is in the neighborhood of a ureteral orifice, and finally, the constant drainage of the ureter for some days in those cases in which resection has been necessary or the flap operation of Young has been possible.

SPLENIC ANEMIA WITH REPORT OF A CASE.

By P. E. Truesdale, M.D., Fall River, Mass.

D. H., female, aged 21. American born. Good family history. Admitted to the Highland Hospital, January 11, 1912. Referred by Dr. W. T. Learned. She had "anemia" at seven years, otherwise no illness of importance. For five years she had indigestion, frequently demanding enforced rest and the exercise of special care in her diet. Attacks of hematemesis occurred at least as often as once a year. Stools were always "tarry before an attack." Epigastric pain during the second attack was severe and tenderness across the upper abdomen subsided only after many days.

Catamenia began at 16. Though irregular for several years it has been regular during the past year. Accompanying discomforts have not been marked. About November 20, 1911, she noticed that her stools were tarry. A few days later she vomited blood. Hemorrhages continued for about five days and she remained in bed two weeks. During this attack there was acute pain in the epigastrium with local tenderness that was quite marked. Her best weight was 138 pounds in November, 1911. When this attack subsided she was hungry between meals, but had no pain.

Physical Examination. Well developed and nourished girl, perceptibly anemic. Throat was negative. Heart of normal size and position with sounds regular and of fair quality. Over the precordia there was a loud blowing systolic murmur, heard best at the base and along the left border of the sternum. Palpation of the abdomen revealed an enlargement of the spleen, the lower margin of which was about half way between the costal margin and the umbilicus.

Examination of test meal showed HCl-10. Total acidity—30. No bacteria. No blood or pus cells.

The blood examination was as follows:

Jan. 12, 1912.

Red cells	2,400,000
White cells	3,800
Hemoglobin	30%
Color index	.62

Smears: No normoblasts; no megaloblasts. The red cells show variation in size, but not to a marked degree.

Jan. 16, 1912.

White cells	3,000
Differential count of 100 white cells	
Polynuclears	78%
Lymphocytes	14%
Myelocytes	4%
Eosinophiles	4%

Jan. 27, 1912.

Red cells	3,800,000
White cells	2,200
Hemoglobin	45%

On January 31, 1912, laparotomy was done with a view to splenectomy. Dense adhesions from the spleen to the parietal peritoneum were encountered. Upon separating these adhesions there was persistent hemorrhage of a degree which soon made itself apparent in the condition of the patient. The spleen was, therefore, not removed. The peritoneal covering of the spleen was divided in several places and the omentum was anchored high, with a view to establishing a collateral circulation. The abdomen was then closed. There was a good recovery following this operation and the general condition of the patient continued fairly satisfactorily until November, 1912, when she had another attack of hematemesis.

Examination of blood, April 21, 1913, was as follows:

Red cells	4,800,000
White cells	4,000
Hemoglobin	80%

She entered the hospital again on April 22, 1913. Splenectomy was done. The collateral circulation, which had resulted from an interposition of the omentum, was essentially with the vessels of the abdominal wall. Smart hemorrhage took place from these enlarged omental veins, which, however, were accessible and quickly controlled. There was no excess of free fluid in the peritoneal cavity. Although the spleen was a good fraction larger than it was when seen before, its delivery appeared to be less prohibitive. The liver was more grayish, but its surface was smooth and its consistency apparently normal. The spleen was "turned turtle," as described by Warren,[1] and the large vessels at its hilum were ligated. The operation was completed with the patient in fair condition. Convalescence was slow, but was marked by a progressive improvement in the blood picture, and in the general health of the patient. Now, eighteen months after operation she has passed her probationary period in a training school for nurses connected with the hospital of a neighboring city.

Blood examinations at the date of discharge from the hospital and subsequently were as follows:

May 4, 1913.

White cells	10,000

May 13, 1913.

White cells	15,000
Red cells	4,800,000
Hemoglobin	70%

May 28, 1913.

White cells	10,000
Red cells	4,000,000
Hemoglobin	80%

January 1, 1915.

White cells	12,000
Red cells	5,600,000
Hemoglobin	85%

Pathological Report. Specimen consists of a spleen weighing 288,000 grams. It measures 21 x 13 x 7 cm. At the lower pole there is a patch of calcareous deposit, 7 x 4 x 5 cm.

Microscopical Examinations. Sections of the specimen show the increase in size to be due to an overgrowth of the connective tissue of the organ. There is no hyperplasia of the lymphoid tissue. Some sections are densely peppered with a black pigment (iron?).

Diagnosis. Chronic splenitis

Dr. A. C. Macrae.

This case is recorded on account of its clinical analogy to gastric ulcer. The patient had a persistent disturbance of digestion, hunger between meals, intermittent attacks of hematemesis and epigastric tenderness. During one attack she was seen by Dr. W. T. Learned and Dr. E. F. Curry, whose examination revealed an elevation of temperature and pulse, associated with a distention and marked tenderness over the upper abdomen. The cause of this picture, by no means inconsistent with a perforated gastric ulcer spontaneously sealed, was explained by the presence on the upper surface of the spleen of a large area that had become necrotic. Later, upon finding an enlargement of the spleen, a blood examination was made and the diagnosis established. Thus is emphasized the indispensability of a blood picture in a case in which the spleen may be suspected of playing a part.

Splenic anemia occurs in young adults as a rule. It begins insidiously and at first progresses slowly. The first indication may be hematemesis, epistaxis, melaena, slight or so severe as to be almost fatal. Senator[2] states that the blood examination reveals a fairly uniform condition of things. There is a diminution in the red blood cells. There is a low percentage of hemoglobin, and a leucopenia. In the later stages of the disease ascites appears, preceded or not by cirrhosis of the liver. It is this association of enlarged spleen, ascites, and cirrhosis of the liver to which Banti[3] has drawn special attention. He pointed out that in cases of this association the enlargement of the spleen, sometimes at least, was the precursor of the other two conditions and probably was the original focus.

D'Espine[4] believes that the beginning of Banti's disease in adults dates from early childhood in many cases. He reports two cases in infants with the autopsy findings and tabulates the details of sixteen other cases in children which he has compiled from the literature. In eight cases the symptoms were merely enlargement of the spleen and anemia,—the first stage; in seven cases there were in addition hemorrhages, especially from the stomach and intestines, urobilinuria, slight jaundice and ascites. D'Espine inoculated the spleen tissue into animals with negative results, confirming the belief that the disease is not of infectious origin.

L. B. Wilson,[5] in a study of eighteen cases of splenic anemia at the Mayo Clinic, writes on the pathology. Thirteen spleens examined showed a chronic diffuse process. In each spleen there was hyperplasia of one or more of the constituent elements. He further states that, while primary splenomegaly may begin as an overgrowth of the lymphoid tissue or of the endothelium, in the ordinary course of events a secondary overgrowth of the stroma of the glands will appear later, accompanied by a degeneration of the lymphoid or endothelial elements; that the largest spleens are those in which the lymphoid or endothelial hyperplasia is greatest. Wilson concludes by observing that the histological picture from cases of primary splenic anemia seems always to be in complete harmony with the hypothesis of the presence of a slowly acting local toxin.

Splenic anemia is now claimed by many authors to have found its place among curable diseases. Present interest appears to be centered around an obscure etiology and the end results reported after splenectomy. Reports of splenectomy for this affection are no longer rare in literature, yet few were to be found published prior to the last decade. The disease was not regarded a clinical entity and the mortality from surgical measures was high, 28%, for example, in a series of 32 cases reported by Armstrong.[6] D'Espine[4] reported eight cases in which splenectomy was done, with recovery of all but one of the children. Among the early successful splenectomies for splenic anemia was a case reported by Dr. J. Collins Warren.[4] The patient was a male, aged 26 years, who complained essentially of distress after eating, occasional vomiting and a troublesome diarrhea. The diagnosis was made from the blood picture and the presence of an enlarged spleen. The operation was complicated by considerable hemorrhage, which was effectively controlled by turning the spleen over in a downward direction, thereby delivering the large vessels of the hilum of the spleen well into the abdominal incision.

Inasmuch as this case was among the first splenectomies for splenic anemia, the details of history leading up to his death form an interesting report. With the assistance of Dr. Warren of Boston and Dr. Torrey of Beverly, he was traced to Greensboro, N. C. By the courtesy of Dr. John Wesley Long, who attended him there, the following report is available.

J. M. entered St. Leo's Hospital, Greensboro, N.C., December 21, 1912. He had not worked for two months on account of nausea, spitting and vomiting of dark fluid. He denied having indigestion or abdominal pain. He stated that he was otherwise as well as usual though not as strong. On the morning of December 20, 1912, while in his berth on the train, he was seized with vomiting and was found on the floor of the sleeper in an unconscious condition, having vomited much bloody fluid. Soon after his admission to St. Leo's Hospital he had another severe spell of vomiting dark bloody fluid. When seen by Dr. Long on the following morning the patient was conscious, much prostrated, pale and inclined to sleep. The pulse was rapid and weak. Attacks of hematemesis continued to recur. The blood picture was as follows:

Red corpuscles	1,936,000
Leucocytes	16,000
Hemoglobin	40%

The patient was losing rapidly and after a consultation it was deemed advisable to operate. The following note was made at the time of operation. The stomach was opened through a 3-inch incision, near the pylorus. The stomach contained bile-stained bloody fluid. No ulcer or growth was found. The pylorus was patulous, and the duodenum dilated but contained no ulcer as far as explored by the finger and the eye. The duodenum and jejunum appeared to contain many blood clots. The under surface of the liver, especially about the bile ducts, and also the left lobe of the liver were hard and nodular, not quite the woody hardness found in malignancy. A small section was removed from the liver for examination. Following the operation the patient had no nausea or vomiting but during the afternoon had a copious bowel movement consisting largely of blood clots, soon after which he succumbed. The excised piece of liver was sent to Dr. W. T. Whitney, curator of the Warren Anatomical Museum, who reported that it was undoubtedly cirrhosis.

Klemperer and Mutsem[7] report a case of Banti's disease cured by splenectomy. Urbino[8] reports nine splenectomies for anemia, from Nurci's clinic with three deaths. W. J. Mayo[9] reports eighteen splenectomies for splenic anemia with two operative deaths and twelve that are well twelve months to seven years after operation.

In conclusion one may reiterate the importance of a blood examination in conjunction with other evidence in order to differentiate splenic anemia from a type of gastric ulcer occasionally present in young adults. And that a patient restored to health for many years by splenectomy may die from a probable continuation of the same process of intoxication.

BIBLIOGRAPHY.

[1] Warren, J. Collins: Annals of Surgery, May, 1901.
[2] Senator: Abdominal Operations. Moynihan. Vol. ii, p. 450.
[3] Banti: Dell' Anaemia Splenica, 1882.
[4] D'Espine: Revue Medicale de la Suisse Romande, Geneva, May, xxxiii, No. 5, p. 357.
[5] Wilson, L. B.: Surgery, Gynecology and Obstetrics, March, 1912.
[6] Armstrong: Journal A. M. A., 1904, xlii, 528.
[7] Klemperer and Mutsem: Berliner klinische Wochenschrift, May 27, 1912.
[8] Urbino: Archives Internationales de Chirurgie, 1912, v, 2.
[9] Mayo, W. J.: Surgery, Gynecology and Obstetrics, March, 1913.

THE STUDY OF DISTURBANCES OF THE STOMACH.

By H. F. Hewes, M.D., Boston.

[From the Clinic of the Massachusetts General Hospital.]

(Continued from page 341.)

The record so far gives us a diagnosis of chronic gastritis proven by the tube finding. This condition may exist by itself or be an associate of cancer. The absence of blood here was perhaps in favor of a simple gastritis as against cancer, but cancer gastritis does not always show blood. The history of alcoholism gave a sufficient explanation of the gastritis. An x-ray examination was made as a further possible means of investigating the possibility of cancer. The x-ray finding was negative. Of course a negative x-ray finding does not rule out cancer, but after exhausting all methods and finding evidence of gastritis only, we are justified in a diagnosis of simple gastritis.

The same result is true in cases where the result of tube examination and x-ray examination are both negative, whatever the character of the history in cases of nervous dyspepsia, and debility, or in cases where the tube finding shows simple hypersecretion or hyperacidity with negative x-ray findings. Some of these cases may be conditions of organic disease but all that we can do is to exhaust our methods of study and report them as nerve or functional conditions according to the finding. In this case, the tube finding was the important factor in diagnosis.

This series of cases illustrates the method of procedure employed in stomach work. Diagnosis is made, as you see, sometimes on the evidence of one finding, but as a rule by the study of the combined evidence of the findings by all methods of study, the history record, tube examination, and x-ray examination. A very important factor is the judgment of the physician in interpreting the evidence of the combined clinical picture. A physician may be expert in tube examination or in x-ray examination, but this is not enough. Most of all he must be a man of experience in the interpretation of combined clinical pictures.

The meaning of special findings, however definite, varies greatly according to the other factors of the case. Thus a definite x-ray finding has one meaning when combined with one kind of history or one kind of tube finding, and another meaning when combined with a different record in this respect.

This point is illustrated by the following records:

Case 10. M., age 20. For eight years, probably more he thinks, he has had spells of dyspepsia, consisting of distress in lower part of epigastrium, coming on two hours or more after meals. The symptom comes three times a day and is relieved by eating. Has 2-4 spells a year, lasting until he consults a doctor, then freedom for about two months, then another spell. No vomiting, some gas. The principal thing is a gnawing distress in belly. Is otherwise a well boy.

Examination: Hb., 100%. Physical examination negative.

Fasting contents, 20 c.c. of clear fluid containing a few cells, no food, no blood. Feces negative.

X-ray: Stomach outline normal, good sphincter, but irregularity of D-cap. Marked deep vigorous peristalsis in stomach above pylorus. No 6-hour residue.

Diagnosis: History suggests a duodenal ulcer of long duration. X-ray suggests duodenal ulcer. Operation: Small ulcer of anterior wall of duodenum with scar tissue.

Case 11. E. Z., age 22, Aug. 5, 1914. For ten years at least has had trouble with his stomach, he calls it sour stomach. He will have 2-3 days of symptoms, then freedom for perhaps a week. Mostly the symptoms in the spells consist of distress soon after eating, which may last hours. There is gas and sometimes vomiting. The location of pain is just below the navel, on the whole to the right,—it is not really pain, but distress and a sour feeling in the mouth, with raising of acid fluid. For a period of two years vomited often, every 2-3 days, after food. No vomiting now. Trouble may keep him from work in spells. Bowels always constipated.

Examination: Physical examination negative. Fasting contents, 20 c.c. of clear fluid with abnormal cellular sediment but no food. Free HCl present. Test meal: Free HCl, 0.15%. X-ray record: Constant irregularity of duodenal cap. Outline of stomach normal, sphincter normal. Stomach empties at the start more quickly than normal, yet some 6-hour residue. Peristalsis above pylorus normal.

Diagnosis: History suggests some longstanding cause of dyspepsia, but the type of symptomatology is not typical of ulcer, though possible as an associate of this condition, since many ulcer cases do not have typical symptomatologies. X-ray finding suggests duodenal ulcer, in the irregularity of the duodenal cap area by fluoroscope and plate, similar to that seen in the patient just reported who was operated upon the day before this patient and showed duodenal ulcer.

Operation: No ulcer or abnormality of stomach or duodenum formed. Chronic appendix with mass of adhesion about it. Appendix removed and diagnosis verified.

Here are two cases with a similar x-ray finding of a significant character in the present state of knowledge of x-ray interpretation. In the case with the ulcer, the history record was typical also, and I had no hesitation in making a positive diagnosis. In the second case the history was not typical and I did not make a positive diagnosis, but thought the x-ray finding sufficiently definite to justify exploration, especially with the long history of disturbance. There is one more point brought out by a comparison of these two cases. The x-ray expert made a positive diagnosis of ulcer in both cases but he pointed out a discrepancy in the second record as contrasted with the first which makes the record less typical as regards ulcer than the first. In the first case in addition to the constant irregularity of the duodenal cap there was abnormally deep and vigorous peristalsis of the stomach. In the second there was the same irregularity of the cap but the peristalsis of the stomach was normal. On such points, a difference in associated symptoms with similar findings by x-ray, and a slight variation in these x-ray findings in the two cases, may a difference in diagnosis hang.

Case 12. R. T., age 28. May 12, 1912, the patient was operated on for appendicitis. The attack as far as could be determined was an acute one and some fluid was found in the peritoneal cavity. Six months after the operation the patient began to have symptoms of stomach distress, which have continued since and increased in severity. At the present time, Sept. 1, 1914, the symptoms are as follows: Upon rising the patient is all right and eats a good breakfast. About one hour after breakfast a gnawing feeling comes in his stomach and he begins to regurgitate sour stuff, which he spits out. The noon meal relieves the symptoms. One to two hours later they begin again—to be again relieved by the evening meal, returning about 9 p.m. No vomiting. Some loss of weight. The trouble is always with him.

Tube examination: Fasting contents, 20 c.c. of clear fluid. No food, no blood, free HCl present. Test meal contents: Free HCl, 0.19%; high acidity. Feces examination negative. X-ray examination: Marked irregularity of pyloric sphincter and duodenal cap. Peristalsis above abnormally deep and vigorous. Operation showed firm bands of adhesion running from the duodenum to the gall bladder and liver. Many adhesions about gall bladder and about cecum and ascending colon at hepatic flexure. Gall bladder normal. No evidence of ulcer of the stomach or duodenum.

If we compare the record of this case with that in No. 10 which proved to be a case of duodenal ulcer, we find that the two records are similar in all respects, the character of the symptoms, the tube finding and the x-ray finding. Even the minute details of the x-ray finding are similar. In fact the x-ray expert made a positive diagnosis of duodenal ulcer in Case 12 as well as in Case 10. The only difference in the two cases lies in the record of appendicitis and operation preceding the onset of symptoms in the latter case. This one point of the record suggested that adhesions formed at the time of the appendicitis and attached to the duodenum might be a pathological process behind the symptoms rather than ulcer. In fact this was the diagnosis which was made before operation in spite of the x-ray expert's diagnosis of ulcer.

Adhesions are an undoubted cause of stomach symptoms in many cases. As a rule they do not give as typical a picture of duodenal ulcer in history and x-ray findings as in this case, but this case and many other similar ones that I have seen prove that they may do so. So where there is reason from the earlier record of the case, to believe in the presence of adhesions, as in this case, I always make an alternative diagnosis of ulcer or adhesions, or cancer or adhesions, whatever the x-ray sign, unless the tube findings prove definitely cancer or ulcer.

Here is another case illustrating this same point, viz:

1. The capacity of adhesions to give stomach symptoms. 2. To give x-ray findings which cannot be distinguished from the findings seen in cancer or ulcer of the stomach. 3. As compared with the cases already reported, the different meaning of definite x-ray findings when associated with one set of clinical factors, from that seen with the same finding associated with another set of clinical factors.

CASE 13. M. S., age 60. Two years ago the patient was taken with a sharp pain in the epigastrium to the right, going to the shoulder blade. Pain lasted 4-5 hours. Patient was then well, with no symptoms of dyspepsia for six months, when another attack of pain in the stomach and right side occurred. The severe pain lasted most of one day, and some pain continued for three weeks. Was laid up in bed. No vomiting. Then relief until five months ago, when pain again returned. This pain has been present ever since, not constantly, but a part of every day. Some gas. Bowels constipated. The patient has developed a brown color. The distribution is not that of Addison's disease. No real icterus.

Examination: Hemoglobin, 70%. Physical examination negative. Fasting contents: 10 c.c., no food, no blood, no excess of cells. Free HCl present. Test meal: Free HCl, 0.07%.

X-ray examination: Failure of peristalsis over lower part of curvature and antrum. An irregular shadow in this region. Some 6-hour residue of bismuth. Spincter and cap normal. Diagnosis: History suggests gall stones. X-Ray record, carcinoma of the stomach. Tube finding against cancer of the stomach advanced sufficiently to give the x-ray picture obtained, if this picture represented cancer.

Operation showed gall stones, and firm adhesions from gall bladder to curvature of stomach and duodenum. Here we had an x-ray finding suggesting malignant disease of the stomach or at least some lesion of the stomach wall, but the distortion of the stomach was due to adhesions.

This case, like the others, shows how much diagnosis may be a matter of the evidence of the combined findings of the case, rather than of any one single finding however positive.

From the practical point of view in such cases as these, doubt as to the exact diagnosis, or error in this, is not of great consequence, since all the cases had an organic lesion, for which operation was the proper treatment. All that we needed to diagnose was some organic pathological process affecting the stomach, demanding operative treatment, ulcer, or cancer, or adhesions. The cases where we cannot afford to make such positive diagnosis incorrectly are those where the stomach condition, giving the positive signs as the x-ray signs, is a purely functional process or the result of reflex disturbance of the stomach from general disease, or from disease located elsewhere than in the stomach or stomach region. A case of gall stones can be operated upon through the same opening made for stomach exploration, but a case of chronic appendix (Case 2) or of intestinal adhesion, or a renal calculus cannot always, and in such cases the error is of some account, even if real operative work is needed after all, and the functional conditions, nerve conditions, heart conditions, tubercular conditions, syphilitic conditions, ptotic conditions, giving stomach symptoms or signs, should not be opened at all.

Here is another case illustrating this same point of the dependence of diagnosis upon combined findings rather than one single finding.

CASE 14. R. H., age 42. For 2½ years the patient has suffered much of the time from distress soon after food and bloating with gas. Eight months ago she began to vomit and has vomited every day since, sometimes three times a day. Vomiting comes after eating, and according to the patient contains food of previous days. No actual pain. She has never vomited blood. The patient has lost about 10 lbs. in 8 months. She is evidently of neurotic type.

Examination: Hemoglobin, 80%. Examination otherwise negative.

Tube examination: No fasting contents obtained. Test meal contents. Free HCl, 0.18%.

X-Ray examination: Opposite lesser curvature an incisura. No other irregularity in stomach outline. Peristalsis vigorous. Feces showed slight blood test. The x-ray finding here was suggestive of possible ulcer but not definitely diagnostic as the peristaltic variation from normal was slight and such as may be seen in functional disturbance or with adhesions. Further tube examination and feces examination was ordered. The second tube examination showed: Fasting contents 15 c. c. of reddish fluid giving a strong blood test, no food, free HCl present. Numerous epithelial cells in sediment. Test meal contents taken a day later gave a positive blood test. Feces gave a positive blood test. A third tube examination gave a positive blood finding in the fasting contents. Feces again gave a blood test. A second x-ray examination gave a normal finding. The incisura found before could not be seen.

With the repeated blood findings, however, it was decided to explore for ulcer. Operation showed a chronic ulcer of lesser curvature. In this case the x-ray finding was suggestive of ulcer on one occasion but failed to give evidence on another. It was not conclusive enough to go by alone, but with the repeated blood findings in the stomach contents and feces, and the history, the combined picture was sufficient for diagnosis of ulcer. In fact, I should have advised operation here upon the repeated blood findings alone, if both x-ray records had been negative.

Case 15. R. P., age 25. Two years ago the patient had a sharp attack of pain in the epigastrium followed by several days of dyspepsia. No vomiting. Since that time there have been several periods of dyspepsia lasting a week to a month with gnawing distress, coming as a rule one to three hours after eating, and raising of gas. For the last two months dyspepsia has been fairly constant.

Examination: Hemoglobin, 85%. Physical examination otherwise negative.

Tube examination: Fasting contents, 20 c.c. of clear fluid, no food, no blood, free HCl present. Test meal contents. Free HCl, 0.07%. Feces examination negative.

X-Ray examination: Incisura in antrum wall. Peristalsis vigorous on lesser curvature. X-Ray diagnosis, ulcer of lesser curvature near antrum. With this finding further tube examinations were ordered. All of them were negative as well as all feces examinations. The patient was operated upon with the diagnosis of gall stones, in spite of the x-ray diagnosis of ulcer. Gall-stones and some adhesions from gall-bladder to stomach were found Here the incisura x-ray finding was not supported by tube findings as in the previous case, and it meant a different condition than in the previous case, though similar in type.

Definite tube findings also have a different interpretation according to the associate findings. For example, a hypersecretion or hyperacidity finding combined with an x-ray finding suggesting gastric duodenal ulcer, means ulcer. In the absence of such associated finding it may mean simple hyperacidity.

There are a few facts which I have had impressed upon me by experience in the study of stomach cases, which I wish to specially emphasize. The first fact is the danger in making a diagnosis by the record of symptoms alone in the face of negative tube, x-ray and feces findings, particularly if the diagnosis leads to advice for operation. The following case will illustrate this point:

Case 16. A. R. Age 50. August 1914. One year ago the patient began to have distress in the stomach coming soon after meals and associated with vomiting from the start. The distress came daily, the vomiting three or four times a week in the early days. The condition has persisted. During the last month vomiting has occurred daily. No blood seen. The patient has lost 25 lbs. in weight in four months.

Examination: Patient thin but fairly nourished. Hemoglobin, 75%.

Tube examination: Fasting contents, 20 c.c. of clear fluid. No food, no blood. Free HCl present. Test meal contents. Free HCl, 0.06%. X-ray examination. Outline of stomach and duodenum normal. Peristalsis normal. Feces test negative.

Here the history suggested marked stomach trouble as in Case 2, but all clinical findings were normal. A diagnosis of possible cancer was made by the attending physician and operation was performed. No lesion of the stomach was found. Gall bladder and appendix were also normal.

This case illustrates the danger of positive diagnosis by history alone, with negative clinical findings. I was personally against operation in this case as I did not believe that either cancer or ulcer of the stomach capable of giving the symptoms recorded here could exist with negative findings both by x-ray and tube.

Here is another case showing the unreliability of a record of subjective symptoms for diagnosis:

Case 17. R.A., Age 29. For two years the patient has suffered from dyspepsia continuously. The symptoms are distress coming one to three hours after meals, relieved by food, frequent regurgitation of sour fluid, no vomiting. Loss of 20 pounds in two years. The patient is a steady drinker but never gets drunk.

Examination: Hemoglobin 90%. Fasting contents, 50 c.c. of green mucus like fluid adhesive to the bowl. No food, no blood, no free HCl. The sediment is filled with epithelial cells in mucus. Test meal. Free HCl present, amount 0.03%, lower than the average normal. Feces examination negative.

(To be continued.)

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. A CRITICAL ANALYSIS OF 134 MICROSCOPICALLY PROVEN CASES.

By Torr Wagner Harmer, M.D., Boston.

Assistant in Anatomy, Harvard Medical School; Junior Assistant Surgeon, Children's Hospital; Assistant in Surgery, Massachusetts General Hospital.

(Continued from page 338.)

CASE REPORTS.

INTRANASAL AND ACCESSORY SINUSES.

Case 6. Personal Case. E. M. McK., girl of 12. Throat records, vol. xv, p. 161. Referred by Dr. Mosher.

Feb. 17 1911, record states: right incisor stands alone pushed out in front of tooth line. Gum on this side very much enlarged and darker in color than surrounding tissue. Both antra dark to transillumination.

Feb. 18, 1911. Operation, Dr. Mosher. Ether. Right upper canine removed and found to be sound. Tumor tissue hard and fibrous, slightly suggestive of osteosarcoma. This was found to extend upwards into antrum. The anterior wall of the antrum together with tumor removed with chisel. Cavity curetted. Considerable hemorrhage. Packed.

Pathological Report. Giant cell sarcoma.

March 1, 1911. Toxin treatment started and continued for six weeks. Maximum dose, 2½ minims. Constitutional reactions of moderate character. Local reactions (pain in cavity after injections) severe.

March 4, 1914, two years, eleven months since toxins discontinued, patient found in her new home. Well developed and nourished girl of good color without subjective or objective evidence of recurrence.

May 29, 1914. Patient still well, three years, one month since treatment discontinued.

Criticism. Owing to the good results obtained by excision and curetting in cases of this type it may be argued that this case should be excluded. It has been included on account of the size and extent of the process. Recorded in Group F.

Case 7. Personal Case. Referred by Dr. Mosher. Chondrosarcoma of the antrum, ethmoid, and sphenoidal sinuses. J. T., a weaver of 31. Throat records, vol. xxiii, pp. 41 and 255.

Nov. 11, 1912. Ten weeks ago struck over left zygoma with weaving shuttle. Swelling persisted and after two weeks began increasing. Slight exophthalmus for six weeks. Pain slight. Examination shows considerable edema of the left face. Tenderness to pressure over zygoma and antrum with dense shadow of all sinuses on the left by transillumination.

Nov. 12. Operation, Dr. Mosher. Zygomatic arch removed, exposing somewhat encapsulated tumor involving antrum, ethmoid and sphenoidal sinuses. Removed as completely as possible with the curette and packed.

In four days mixed toxin treatment begun and continued every other day for five weeks. Injections into abdomen with marked systemic and very marked local reactions. Maximum dose, 16 minims. No evidence of recurrence upon discharge (Dec. 24).

Pathological Report (1211-59), Dr. W. F. Whitney. Chondrosarcoma. Small piece of firm fibrous looking tissue. Microscopical examination showed growth of small cells in rather solid masses, in places with a hyaline degeneration, and in other places a myxomatous character, in still other places an appearance suggesting softened cartilage.

Two months later returned with recurrence size of walnut below left eye. Dr. Mosher performed an extensive operation, removing part of the superior maxilla. Nine months later in good flesh and color without evidence of recurrence. A few months later, however, an extensive recurrence developed involving the orbit and patient died. Recorded in Group C.

Case 8. (Table, Case No. 4.) Case of Dr. L. L. McArthur of Chicago. Female, age 5½ years. Sarcoma of antrum and naso-pharynx.

Pathological Report. Round cell. Toxin treatment instituted and continued three months with disappearance of growth; but this recurred in a few months and proved fatal. Recorded in Group C.

TONSIL.

Case 9. (Case No. 13.) Round cell sarcoma of the tonsil and neck. C. W., male, age 56 years. Growths of the right tonsil and neck for two months about size of an almond and English walnut respectively. Toxin treatment continued three months. Maximum dose, 5 minims. Reactions fairly severe. Tumors began to decrease in size after first week, became softer and more movable and disappeared in five weeks. Site of injections pectoral region. No recurrence 3½ years later. Recorded in Group F.

Case 10. (Case No. 4.) Round cell sarcoma of tonsil and neck. A. L., female, 11 years of age. Growth of right tonsil and neck of a year's duration, size of half an egg. Toxin treatment continued six months with marked softening and entire disappearance in two months. Maximum dose 3 minims. Reactions marked. Injections into pectoral region and a few into neck. Well six years, seven months after toxins discontinued. Recorded in Group F.

Case 11. (Case No. 3.) Small round cell sarcoma of the tonsil and neck. H. M., male, 32 years of age. A growth of two weeks' duration, involving tonsil and neck, was operated upon but speedily recurred despite x-ray and radium treatment. Pathological report of recurrence, a small round cell sarcoma. Toxin treatment for about seven weeks. Reactions marked. Growths entirely disappeared in six weeks. Injections into tumor and pectoral region. Interval between operation and toxins six weeks. Recurrence in other tonsil five years later. Twice operated. Death in two months. Recorded in Group C.

Case 12. (Table, No. 84 and *Surg., Gyn. and Obst.*, 1911, vol. xiii, pp. 184-5.) Case of Drs. Crile, McMullen, Stanton, and Coley. Male, 35 years of age. An inoperable small round cell sarcoma of the tonsil and neck. Toxins instituted with almost complete disappearance in five weeks. The dose was then reduced and in another five weeks the tonsil was of twice normal size. Second microscopic examination, round cell sarcoma. Toxins continued with entire disappearance of tumor. Doses again reduced, followed again by recurrence. Death one year after treatment started. Autopsy showed no metastases except in neck. Recorded in Group C.

Case 13. (Case No. 14.) Small round cell sarcoma of tonsil with metastases in both sides of neck. C., male, 42 years of age. Growth of right tonsil nearly blocking up pharynx with masses in both necks. Toxins instituted with entire disappearance of growths in four months. Injections into pectoral region. Maximum dose, 20 minims. Reactions severe. One year later recurrence in submaxillary region, size of hen's egg. Removed.

Pathological Report. Small round cell sarcoma. Toxins refused. Rapid recurrence and death within a year. Recorded in Group C.

Case 14. Personal Case. Referred by Drs. Mumford and Porter. J. H. K. House No. 177039. Fireman of 25. A large round cell sarcoma of the right tonsil, size of ping-pong ball, pushing uvula to left, and of the right neck, 6 x 5 inches.

Pathological Report. (117-52.) Dr. H. F. Hartwell. "A small bit of tissue removed from a tumor shows microscopically tumor cells infiltrating muscular tissue. The cells composing the tumor are large round with very faintly staining cytoplasm and having deep staining nuclei. There are numerous blood vessels which lie in close relation to the cells. Here and there are larger-sized cells with multiple nuclei, which are frequenly superimposed. There are a number of mitotic figures."

Treatment with toxins from July 18 to August 15, 1911. Sixteen injections. Maximum dose 18 minims. During first three weeks marked diminution in the size of the tonsil tumor, which became very fluctuant. Tumor in the neck practically disappeared. After this, despite increasing doses with severe reactions, the tumors increased rapidly in size and the patient died Sept. 14, 1911. Recorded in Group C.

Case 15. Personal Case. Referred by Dr. Farrar Cobb. Recurrent small round cell of tonsil and neck. A. B., Italian of 65. House records, S.S. vol. ccvi, p. 277.

Admitted Sept. 26, 1910, complaining of soreness of left tonsil for three weeks. Local physician said to have removed a "piece of wood" from this tonsil one week ago. This tonsil is now the size of an English walnut, hard, not especially tender, and without ulcerated areas. Olive-sized gland behind angle of left jaw, hard and adherent, and slightly tender. Small pea sized gland above clavicle. Sept. 29, Dr. Knowles snared large portion of tonsil and removed the rest by dissection.

Pathological Report (109-123), Dr. Whitney. Lymphosarcoma. Left tonsil enlarged to the size of a small plum, soft and extensively necrotic. Microscopic examination of piece showed a growth of small round cells of lymphoid character but without any distinct follicles, but in places clearly infiltrating between bundles of muscle fibres. In these were numerous mitotic figures.

Oct. 5. Operation, Dr. Cobb. Extensive dissection of neck for removal of mass with tying of lingual and fascial arteries.

Pathological Report (1010-24), Dr. Whitney. Malignant lymphoma. Mass of glandular tissue 4 x 2 cm., which had broken down and contained considerable necrotic material. Microscopic examination showed a growth of small lymphoid cells, which were seen to be infiltrating into the surrounding fibrous tissue. There was no normal structure of the lymph node. Recorded in Group B.

PHARYNX.

Case 16. Personal Case. Referred by Dr. Beth Vincent Aug. 20, 1912. G. P. O.P.D., No. 124742. Italian, 47. There was a firm ulcerating mass occupying the right tonsil, floor of mouth, base of tongue, epiglottis, soft palate, and pharynx. Laryngoscopic examination impossible. He spoke only in a thick whisper and could eat only liquids and very soft solids, much of which came out through the nose. Several sections removed under cocaine.

Pathological Report (128-121), Dr. Hartwell. "Specimen consists of several pieces showing, on microscopical examination a richly cellular tumor composed of spindle cells which are arranged in narrow bands interlacing with one another and running in all directions. Spindle-cell sarcoma."

Mixed toxin treatment instituted and continued regularly for four and one-half months. Maximum dose, 10 minims. The mass softened and sloughed out cleanly. He gained in weight and color, was able to eat more food without losing any through nose, and could speak distinctly. Against advice he then insisted on returning to work. In five months he was a pale, emaciated man with metastases in the lung, neck, and belly, practically unable to eat or make self understood by speech. Died August 22, 1913. Recorded in Group C.

Case 17. Personal Case. Referred by Dr. Crosby Greene. Round cell sarcoma of the pharynx and soft palate. M. M., male, 32. House No., 192357, 193196, 193673.

Nov. 17, 1913, admitted with history of swelling in throat of two months' duration. For past fortnight pain in right ear and "noises" in both ears. Deglutition difficult. Some dyspnea. Some difficulty in opening mouth. A somewhat pale, well built man. Teeth poor. Nose and ears negative. In soft palate a little to right of mid-line a large, hard, bluish red tumor, extending down into region of right tonsil and back into nasopharynx. Wassermann reaction negative. Oct. 17. Tracheotomy and enucleation of the tumor by Dr. Greene.

Pathological Report (1311-85), Dr. Whitney. Lymphosarcoma. An irregular piece of soft mushy tissue. Microscopical examination shows growth of small cells about size of lymphoid ones but without any regular structure.

Mixed toxins started in eleven days and continued for four weeks. Maximum dose, 3 minims. Reactions occasionally severe. Injections into growth which rapidly recurred. No appreciable effect upon this or metastases in the neck, which soon developed. Jan 5, 1914, Dr. Green excised glands of neck. Pathological report, round cell sarcoma. Recurrence occurred within two weeks. Recorded in Group A.

CERVICAL GLANDS.

Case 18. (Case No. 7.) P. K., male, 41 years of age. Mass size of hen's egg in submaxillary region, operated upon but complete removal impossible, the tumor having involved the muscles of the neck and periosteum of the lower jaw.

Pathological Report. Small round cell sarcoma. Toxin treatment for one year with entire disappearance in three months. No evidence of recurrence 4½ years later. Recorded in Group F.

Case 19. (Coley, Table, Case No. 6.) Recurrent small round cell sarcoma of the cervical glands. A. P., 2 years 10 months of age. After two attempts at removal followed by recurrence toxin treatment was instituted, when there was a series of tumors extending from clavicle to mastoid and also involving the axilla. Treatment continued three months with complete disappearance of all growths. Patient well twelve years later. Recorded in Group F.

Case 20. (Case No. 11.) Round cell sarcoma of the cervical glands. H. W., male. Growth in submaxillary region size of pecan had been enucleated, followed soon after by recurrence size of a cherry. This also removed, followed within a week by diffuse recurrence.

Pathological Report. Small round cell sarcoma. Toxins started and continued for three months. The submaxillary growth had then disappeared and the other glands had not increased in size. A third attempt at removal was made, but complete operation was impossible. Toxins therefore resumed and continued nine weeks. Maximum dose, 9 minims. No evidence of recurrence seven months later. Recorded in Group F.

Case 21. (Table, Case No. 3.) Case of Major C. G. Spencer, Royal Army Medical Corps. Small round cell sarcoma of the cervical glands. Corporal M. M., 25 years of age. Mass in left neck of a year's duration, excised, with rapid recurrence.

Pathological Report. Lymphosarcoma. Second attempt then made but incomplete, the left side of neck being filled with masses of large glands. Toxins instituted and carried out in two courses of thirty-four days and one month each. Maximum dose, 8 minims. Injections into tumors with well marked local reactions. Masses entirely disappeared in one month. No evidence of recurrence nine months after treatment discontinued. Recorded in Group F.

Case 22. (Table, Case No. 111.) Case of M. E. Green. An adult male with small round cell sarcoma of the cervical glands four times recurrent. Toxin treatment then carried out for several months with entire disappearance of growth. Patient well over three years later. Recorded in Group F.

Case 23. (Case No. 15.) Round cell sarcoma of the cervical glands. F. W., male, 58 years of age. Removal of mass in right neck the size of a small egg, with recurrence within a month. Toxins then started and continued for eleven months. Maximum dose, 4½ minims. Reactions moderate. Tumors entirely disappeared and no evidence of recurrence four years and ten months after toxins discontinued. Recorded in Group F.

Case 24. (Case No. 12.) Round cell sarcoma of neck. A physician. Excision of the mass in neck had been practised, followed rapidly by recurrence, which in a month had attained the size of a fist. Toxins were then started, injections being given into pectoral region, and continued for three months with progressive decrease in size and softening, Maximum dose 20 minims. Six months after toxins discontinued no evidence of recurrence. Recorded in Group F.

Case 25. Personal Case. Referred by Dr. Farrar Cobb. Multiple small round cell sarcomata. M. C., housewife of 55. House No. 186421.

Dec. 7, 1912. Six months ago began to have severe frontal headaches. Four months ago small hard swelling on right side of nose near bridge, which has gradually and painlessly increased in size. Three months ago mass discovered in front of right ear, which has also gradually and painlessly grown. About the same time a mass appeared just above right clavicle and another in right neck. A vigorous, somewhat obese woman with mass size of cherry on right side of nose, boggy to firm consistency, and firmly fixed. In right parotid region mass extending from zygoma over angle of jaw into neck and forward to region of submaxillary gland. Behind right sterno-mastoid muscle several pea to bean sized glands. In front and behind left sterno mastoid muscle, several small glands also palpable. In right supraclavicular region a firm and freely movable swelling the size of a pigeon's egg.

Excision of several glands for diagnosis.

Pathological Examination (1212-45), Dr. Whitney. A packet of enlarged lymph nodes with homogeneous section. Microscopical examination showed normal structure of lymph nodes lost and a growth of small lymph cells size of lymphoid ones with numerous mitotic figures. Considerable hemorrhage throughout growth. On the edge it was sharply circumscribed and a similar growth was found infiltrating the surrounding fat tissue.

Toxin treatment started Dec. 17 and continued every two or three days until Feb. 15, 1913 (2 months). Maximum dose, 13 minims. Reactions very severe. During the first month of treatment the mass in the right parotid region diminished very markedly. The mass over the clavicle became smaller. The mass on nose became softer. Despite these results a growth was developing in left submaxillary region and, although attacked vigorously with toxins, was not affected but grew steadily in size. The mass in right neck, however, practically disappeared. Toxins omitted. X-ray instituted. Patient died with metastases in abdominal wall, chest, and both breasts, in four months. Recorded in Group D.

Case 26. (Case No. 16.) Round cell sarcoma of neck. L., male. Attempted removal of lympho-sarcoma of the neck with recurrence.

Toxins started, and after two months tumor had disappeared. Toxins continued four months longer. During the last two months of this period a recurrence had appeared which soon produced metastases in the axilla and abdomen. Patient died within a year. Recorded in Group C.

Case 27. (Table, Case No. 26.) Case of J. A. Moore of Helena, Montana. Round cell sarcoma of the cervical glands. Female, 31 years of age. In January, 1894, unfiltered toxin treatment started for multiple supraclavicular masses. Treatment continued one month with entire disappearance of growths. These, however, soon recurred. Recorded in Group C.

Casae 28. (Table, Case No. 104.) Case of Dr. G. H. Muller of Philadelphia. A male with inoperable recurrence of lympho-sarcoma of the neck one month after attempted removal. Toxin treatment resulted in complete recovery. Patient remained well for four years, when local recurrences and intra-abdominal metastases appeared. Recorded in Group C.

Case 29. (Table, Case No. 16.) Small round cell sarcoma of neck. Case of Dr. J. Collins Warren (B. M. and S. J., 1896, cxxv, pp. 673-674.) 45 F. Attempted removal of growth of submaxillary region unsuccessful.

Pathological Report. Small round cell sarcoma. Recurrence in two weeks. Under unfiltered toxins for three months with marked reactions. Entire disappearance of growth. Recurrence in three months. Recorded in Group C.

CHEST WALL.

Case. 30. (Case No. 33.) Spindle cell sarcoma of left half of thoracic wall. S. C., female 16 years of age. Tumor had appeared in left scapula region four months previously, had grown rapidly frontwards to the sternum and measured thirteen inches in breadth and two inches in thickness in the most protuberant part.

Pathological Report of the specimen. spindle cell sarcoma. Toxin treatment was started and continued for four months; injections into tumor. Whole mass entirely disappeared in three months. Patient in good health with no evidence of recurrence nineteen years later. Recorded in Group F.

Case 31. (Table, Case No. 28.) Case of W. H. Battle of London. Fibrosarcoma of the chest wall. Male, 30 years of age. Toxin treatment undertaken for extensive growth in the pectoral region with masses in axilla above and below clavicle. Treatment continued four months with "almost complete disappearance." Well one year later. Recorded in Group E.

BREAST.

Case 32. (Case No. 58.) Inoperable spindle cell sarcoma of the breast and axilla. Toxin treatment instituted for mass size of orange in left breast. Adherent to deep parts and extended into axilla. Section removed for examination.

Pathological Report. Spindle cell sarcoma. Entirely disappeared after 78 injections. In good health without trace of recurrence 18 years later. Recorded in Group F.

Case 33. (Case No. 54.) Recurrent angio-sarcoma of breast. A. C., 59, female. Thrice recurrent angio-sarcoma of breast. Toxin treatment instituted when mass extended laterally from sternum to anterior axillary line and from clavicle above nearly to costal margin below. It was fixed to chest wall, composed of markedly protuberant nodules and considerably ulcerated. Treatment continued eight months attended by softening and progressive diminution in size of tumor. Mass then excised. No pathological report given. Seen eight years later with fractured femur. No evidence of former trouble. Recorded in Group E.

Case 34. (Case No. 53.) Small round cell sarcoma of breast. K., 22, female. Four operations had been followed by recurrence. Toxins started and shortly afterward a fifth operation was performed. Toxins continued for three months. Recurrence again evident and removed. Seven and one-half years later patient in good health with no sign of recurrence. Recorded in Group C.

ABDOMINAL WALL.

Case 35. (Case No. 73.) Spindle cell sarcoma of abdominal wall. H. L. G., female. Exploratory operation showed a tumor of four months' duration to be inoperable. It involved the entire thickness of abdominal wall and some of bladder wall.

Pathological Report. Spindle cell sarcoma. Toxin treatment continued three months with entire disappearance of growth. Patient well 12 years 3 months later. Recorded in Group F.

Case 36. (Case No. 57.) Spindle cell sarcoma of abdominal wall and pelvis. J. F., 16, female. Growth of abdominal wall 7 x 5 in., apparently involving entire thickness, attached to pelvis, and from symptoms and position evidently involving bladder. Section removed.

Pathological Report. Spindle cell sarcoma. Mixed toxin treatment for about 4 months with disappearance of growth and improved general condition. No recurrence 19 years 7 months later. Six years after toxin treatment patient developed primary lesion of syphilis, which was cured by appropriate treatment. Recorded in Group F.

Case 37. (Case No. 64.) Spindle cell sarcoma of abdominal wall. M. S., 18, female. Tumor of several months' duration of abdominal wall proved upon exploratory laparotomy to be both intra- and extra-peritoneal, but not connected with abdominal organs.

Pathological Report. Spindle cell sarcoma. After 30 injections of filtered toxins tumor disappeared. Reactions mild. Maximum dose, 6 minims. Patient well and without recurrence 1½ years later. Recorded in Group F.

Case 38. (Case No. 2, p. 138.) Spindle cell sarcoma of abdominal wall. Case of Major C. G. Spencer of Royal Army Medical Corps. Female, 53. Growth of suprapubic region extending from pubes to within 1½ inches of umbilicus and 3 inches broad. Section removed.

Pathological Report. Spindle cell sarcoma. Attempted excision followed by immediate recurrence. Toxin treatment for about 3 months started 17 days after operation. Maximum dose, 6 minims. Tumor disappeared. Patient well 5 years later. Recorded in Group F.

Case 39. (Case No. 55.) Fibro-sarcoma of abdominal wall. E. G. L., 28, female. Exploratory laparotomy revealed inoperable growth.

Pathological Report. Fibro-sarcoma. The mass extended into the abdomen, filling the right lower quadrant. Toxins started two months later and continued for ten weeks with disappearance of mass. Seventeen years later an abdominal hysterectomy was performed for fibroids. The abdominal wall was found normal and no trace of sarcoma was seen in the abdomen. Two years later (19 years after toxin treatment) patient still well. Recorded in Group F.

Case 40. (Table, Case No. 97.) Round cell sarcoma of the abdominal well. Case of Dr. Paul Pilcher. Male, 55. An exploratory operation revealed an inoperable growth of the abdominal wall. Section removed.

Pathological Report. Round cell sarcoma. Toxin treatment for four months with gradual and complete disappearance of the tumor. Well one year later. Recorded in Group F.

(To be continued.)

Medical Progress.

PROGRESS IN BIOCHEMISTRY.

By A. Everett Austin, M.D., Boston.

AMINO-ACIDS.

Abderhalden[1] has been able to discover amino-acids in blood and blood serum, and to identify some of them. Since the separation of such acids has been accomplished in various ways, there can be no doubt whatever that free amino-acids are present in the blood. The methods of isolation, many of which are original with Abderhalden, are described in full.

Cammidge[2] estimates the amino-acids in the urine of diabetics by determining the total free ammonia according to Folin's method and the ammonia plus amino-acids by Marfatti's method (Formol titration); the difference is the measure of the amino-acid ammonia. This can be utilized for treatment and prognosis of the disease. In mild cases of diabetes no amino-acids are found, in severe forms they may amount to 0.5 gram per day; often they disappear when the food contains no protein. In other cases they do not, under which conditions the prognosis is much more unfavorable.

Labbe and Bith[3] have estimated the amino-acids in the urine of 120 individuals and, based upon this, came to the conclusion that whenever the functions of the liver are impaired, there is an increase of these acids in the urine. This increase is always an indication of the insufficiency of the liver in metabolizing the ultimate products of protein disintegration. In diabetes, with disturbances of nutrition and acidosis, this increase is the rule. In all other diseases where the destruction of the body's protein is rapid, and those ferments which separate the amino from the carboxyl molecule are weakened (pneumonia, leukemia, cancer and typhoid), the amino-acids are always found in the urine in much greater quantities.

The ability of the animal mechanism fully to synthesize the component parts of the protein molecule, when fed to it as fully split amino-acids, has been shown by Berg and Cahn-Bronner[4], who have shown that the liver cells of animals thus fed exhibit exactly the same droplets as those fed on unsplit protein. These droplets possess all the characteristics of unmodified protein and never appear when fat or carbohydrates are fed; thus they have been able to demonstrate by the totally new method (histologically) the same fact as has been shown by metabolic experiments, the full synthesis of amino-acid.

BLOOD SUGAR.

Bing and Jacobsen[5], using the method of Bang, have made a large number of estimations of sugar in the blood of healthy individuals, as well as in that of those suffering from many varied diseases. They claim that blood sugar of the normal person varies from 0.06 to 0.12%, with an average of 0.1%. After the ingestion of 100 grams of sugar, healthy individuals may react by an increase in the percentage, or may not. This is also true of many after any kind of carbohydrate food. Persons suffering from renal disease invariably have a glycosuria, which does not depend upon the greater blood sugar present, but upon some unknown factor. In diabetes there is not only an increase in the blood sugar after food, but also while fasting. There is no direct relation between the blood and urine sugar. Glycosuria may occur without hyperglycemia, due undoubtedly to a renal influence. The estimation of the blood sugar is of great value in prognosis, since, if there is no increase of blood sugar, though sugar may be found in the urine, it is a favorable omen.

INTESTINAL PUTREFACTION.

Rodella[6] has attempted, by experiments on small animals, to determine the toxicity of stools in case of intestinal disease. His method was to make a suspension of a gram of feces in five c.c. of sterilized water and then inject the same into a rabbit hypodermatically. A control was first made of the stools of normal individuals, both adults and infants. It was found that one gram of feces from a healthy individual will not cause the death of a rabbit. On the contrary, when there existed intestinal catarrh, of whatever origin or grade, whether accompanied with constipation or diarrhea, a gram of the feces proved fatal within a few hours when injected. Some individual peculiarities were noted, as follows: The infant's stools proved much more toxic than those of the adult; the degree of intestinal putrefaction cannot always be told by the effect of the fecal suspension when injected, but one can always differentiate between pathological and bland cases; furthermore, it is possible to detect latent tuberculosis in this way much earlier than in any other manner; there is no relation between the toxicity of the stool and its putrefactive changes. Some with no putrefactive products (indol, skatol, etc.) are extremely toxic, and others charged with these products are not at all poisonous.

GALACTOSURIA.

The utilization of lactose in watery solution, according to the experiment of Draudt[7] on dogs with an Eck fistula, is reduced to 58% and of galactose to 21%, the remainder appearing promptly in the urine. Hence the liver holds a special power of converting these sugars into glycogen, a trait not possessed by other tissues of the body. Therefore a galactosuria indicates a more or less extensive separation of the hepatic cells from the portal circulation. During this alimentary lactosuria and galactosuria the sugar content of the blood is found increased. Its clinical application in hepatic diseases has not yet been demonstrated by the author. On the contrary, Maliwa[8] believes that galactosuria is dependent upon both the liver and the kidneys. The liver determines the concentration of galactose in the blood. When its sugar-converting power is disturbed, with a normal absorption in the intestine, the concentration in the blood rises above the limit to which the normal kidney is adjusted. When the liver is normal, then a disturbance in the eliminating function of the kidney may allow the galactose to pass through into the urine, when the concentration of the blood is still within the limit established for the normal kidney. The quantitative application of the galactose test for impaired liver function must always be employed according to Woerner and Reiss[9]. Galactose must be given in doses of 40 grams, and when 3 grams or more of this appears in the urine it demonstrates a pathological condition of the liver. One hundred grams of levulose, however, must be taken, when if more than 0.7 gram is eliminated, the same conclusion is justifiable.

CHOLESTERIN.

Much interest has been aroused in the peculiarities of the cholesterin metabolism, and Picard[10] has shown that, during violent exercise, the amount of this in the blood serum may become increased or diminished, but that whatever change takes place the opposite extreme always occurs in the adrenal capsule, so that a reciprocal relation always exists in these two as to their cholesterin content. This work has been carried still further by Havers[11], who, by experimental evidence, has demonstrated that the bile becomes much richer in cholesterin during hypernutrition, especially when the excess is made up largely of protein and fat. By restriction of food, fever and pregnancy, the amount of cholesterin becomes much lessened. After the birth of a child, however, the mother's bile becomes rapidly richer in cholesterin. Landau[12] has confirmed Picard in establishing the adrenals as the organs for the storage of cholesterin, which makes them a necessary intermediate agency in its metabolism. The human liver contains only insignificant quantities of cholesterin, and hence cannot be regarded as a depot for its storage. The spleen, lymph glands, and bone marrow also participate in the reception and metabolism of cholesterin.

METABOLISM OF IRON.

After a large amount of experimental work, Bayer[13] has reached the conclusion that the spleen retains and holds the iron which becomes free from the breaking down of the cells of the body and prevents hemolysis. Furthermore, it utilizes this iron in the building of new cells, especially of hemoglobin. This organ also produces a hormon that paralyzes the autonomous system; when this hormon is eliminated, its influence is shown negatively by an increase in intestinal peristalsis. The spleen and thymus have a mutual compensatory action. That the quantitive estimation of the urine iron provides no measure of the destruction of blood in pernicious anemia, has been shown by Queckenstedt[14], since its elimination by the kidneys is entirely independent of the iron metabolism in the body; the fecal iron also shows no relation to the rapidity or extent of the destruction of blood corpuscles. After removal of the thymus glands, the splenic function is much increased, and vice versa; the increased function of the thymus demonstrates itself in symptoms of an exaggerated vagotonus. The increased destruction of iron-containing cells after splenectomy is shown by a lessened erythrocyte count and hemoglobin, in a lymphocytosis and eosinophilia. In Banti's disease there is a severe check to the activity of the spleen, much as in myelolytic leukemia. In both cases, however, there is marked alteration in one function, not in all the activities of the spleen. In Banti's disease, after operation, the conditions are exactly the same as in a splenectomized normal individual

URIC ACID.

Graham and Poulton[15] have found that not only does the endogenous uric acid diminish when the protein food is removed from the diet, as was shown by Folin, but also that a similar diminution occurs when the carbohydrate food is withdrawn. From these facts they attempt to construct an hypothesis of the formation of this acid by synthesis of protein and carbohydrates.

Much discussion has been aroused as to the state of the sodium urate in super-saturated solutions. Kohler[16] adds to this by experimental evidence that, by means of dialysis and electrical conductivity, he has proved sodium urate is not in a colloidal state in such concentrations, but in a true solution though a super-saturated one. In urine also there is a similar solution from which the natural weakly acid reaction sets no uric acid free, while, here, there is no equilibrium between urates and uric acid, since the conditions for solution are much more favorable.

From the investigations which Bass[17] has conducted, he is assured that atophan does reduce the amount of uric acid in the blood. He attributes this to the action of atophan in stimulating the uric acid excreting power of the kidney. The question is then open as to whether this increased elimination comes from a more active formation or from a stored up supply. Hopes are offered that, by a more accurate estimation of this substance in the blood this matter may be decided.

By transfusion of the livers of dogs, Rosenberg[18] has learned that it is possible to extract purin bodies, even when the dog has been kept on a purin-free diet; in fact there are two ways in which to vary the amount which can be extracted: first, before the transfusion by variation of the exogenous purins, the amount may be increased when the dog has been fed on nuclein-containing food and diminished on nuclein-free food; secondly, during the transfusion, when the quantity may be increased by the addition of atophan or adrenalin to the transfusing fluid. The increase under the influence of these drugs may sometimes be more than a half of the total daily purin output of the animal. His conclusion is that atophan mobilizes uric acid.

Working with the colorimetric method of Folin[19], Steinitz has been enabled by his (Steinitz's) modification to estimate accurately and easily the uric acid in 10 c.c. of blood. His results show that the endogenous uric acid amounts normally to 0.02-0.04 parts per thousand, while that of the gouty individual increases to 0.04-0.075 per thousand. Great emphasis is laid on the diagnostic value of this increase, though one should not rely upon this factor alone for a diagnosis of gout.

TESTS FOR EARLY DIAGNOSIS OF GASTRIC CANCER.

The glycyl-tryptophan test has been subjected by Hauschild[20] to a rigid revision, who found that of 26 cases of benign achylia, 11 gave positive reactions (splitting of the amino-acid and detection of free tryptophan). His explanation is that gastric juice contains trypsin much oftener than supposed, but the enzyme is destroyed when any considerable amount of free hydrochloric acid is present. In one case reported of proven cancer, with a free hydrochloric acid of 16, the test was negative. Further, 28 cases of certain gastric cancer, proven either by a mass or by laparotomy, were tested and 19 gave positive reactions, while 9 were negative. Hence he comes to the conclusion that the test is associated, practically, with so many errors that it cannot be relied upon for an early diagnosis of cancer.

The quantitative determination of the dissolved albumen in gastric content extract, according to Wolff-Junghans, has been studied by Smithies[21], who found that only 80% of true gastric cancer gave this test, while in benign achylias none responded to the test.

The detection of dialyzable digestive products, which we also hoped to be diagnostic of cancer, has been found by Wasserthal[22] to be common in achylias. In gastric ulcers with hyperchlohydria the test has also been found positive, but very faint.

REFERENCES.

[1] Abderhalden, Emil: Der Nachweis von freien Aminosäuren im Blut unter normalen Verhältnissen. Ztschr., f. phys. Chem., Bd. 88, S. 478.

[2] Cammidge: The Estimation and Significance of Amino-acids in the Urine in Diabetes Mellitus. Lancet, 1913, p. 1319.

[3] Labbé and Bith: L'amino-acidurie pathologique. Arch. des mal. de l'app. dig. et de la nutrit, December, 1913.

[4] Berg and Cahn-Bronner: Ueber den mikroskopischen Nachweis der Eiweisspeicherung in der Leber nach Verfutterung von Aminosäuren. Biochem. Ztschr., Bd. 61, S. 434.

[5] Bing und Jacobsen: Blutzuckeruntersuchungen unter normalen und einigen pathologischen Verhältnissen. Dtsch. Arch. f. klin. Med., Bd. 113, S. 571.

[6] Rodella, A.: Bericht über klinische und experimentelle Ergebnisse über Darmfäulnis im Jahre 1913-1914.

[7] Draudt, Ludwig: Ueber die Verwertung der Laktose und Galaktose nach partieller Leberausschaltung. Arch. f. experim. Path. u. Pharm., Bd. 72, S. 457.

[8] Maliwa, Eduard: Bemerkungen zur Galaktosetoleranz. Med. Klinik, 18.

[9] Woerner und Reiss: Alimentäre Galaktosurie und Lävulosurie. Dtsch. med. Woch., No. 18.

[10] Picard: Ueber den Einfluss der Muskelarbeit auf den Cholesteringehalt des Blutes und der Nebennieren. Arch. f. experim. Path. u. Pharm., Bd. 74, S. 450.

[11] Havers, Carl: Experimentelle Untersuchungen über Physiologie und Pathologie des Cholesterinstoffwechsels mit besonderer Berücksichtigung der Schwangerschaft. Dtsch. Arch. f. klin. Med., Bd. 115, S. 267.

[12] Landau, M., unde McNee, J. W.: Zur Physiologie des Cholesterinstoffwechsels. Beitr. f. pathol. Anat., Bd. 58, S. 667.

[13] Bayer, Rudolf: Weitere Untersuchungen über die Funktionen der Milz, vornehmlich ihre Rolle im Eisenstoffwechsel, mit besonderer Berücksichtigung des Morbus Banti. Mitteil. a. d. Grenzgeb. d. Med. u. Chir., Bd. 27, S. 311.

[14] Queckenstedt: Untersuchungen über den Eisenstoffwechsel bei der perniziösen Anämie mit Bemerkungen über den Eisenstoffwechsel überhaupt. Ztschr. f. klin. Med., Bd. 79, S. 49.

[15] Graham and Poulton: On the Variations in the Excretion of Endogenous Uric Acid Product by Changes in Diet. Quarterly Jour. Med., 7, p. 13.

[16] Kohler, Rudolf: Untersuchungen über die "übersättigten" Lösungen der Harnsäure und ihre Salze. Ztschr. f. klin. Med., Bd. 78, S. 205.

[17] Bass: Ueber die Purinkörper des menschlichen Blutes und den Wirkungsmodus des Atophans. Arch. f. experim. Pathol. u. Pharm., Bd. 76, S. 40.

[18] Rosenberg, Hans: Zur Frage des intermediären Purinstoffwechsels. I. Mitteilung. Das Purindepot der Leber und seine Beziehung zur Harnsäureausscheidung. Ztschr. f. experim. Path. u. Ther., Bd. xiv, S. 245.

[19] Steinitz, Ernst: Untersuchungen über die Blutharnsäure, Dtsch. med. Woch., No. 19. (Siehe voriges Referat.)

[20] Hauschild, Bernhard: Die Glycyltryptophanreaktion beim Magenkarzinom. Arch. f. Verdkr., 20, 210.

[21] Smithies, F.: A Study of the Value of the Quantitative Estimation of Dissolved Albumin in Gastric Extracts (Wolff-Junghans' Test) in the Diagnosis of Gastric Cancer. Amer. Jour. Med. Sc., May, 1914.

[22] Wasserthal: Les. matières dialysables du contenu stomacal décelables par la réaction de la ninhydrine. Arch. des mal. de l'app. dig., May, 1914.

Book Reviews.

Urgent Surgery. By FÉLIX LEJARS, Professeur Agrégé à la Faculté de Médecine de Paris; Chirugien de l'Hôpital Saint-Antoine; Membre de la Société de Chirurgie. Translated from the seventh French edition by WILLIAM S. DICKIE, F.R.C.S.; Surgeon North Riding Infirmary, Middlesbrough; Consulting Surgeon, Easton Hospital. Third English impression. With 20 full-page plates and 1086 illustrations, of which 739 are drawn by Dr. E. Daleine and A. Leuba, and 198 are from original photographs. Vol. I: Introductory, Head, Neck, Chest, Spine, Abdomen. New York: William Wood and Company. 1914.

This is the first volume of the third English impression from the most recent seventh French edition. The author says: "The book has again been minutely revised and extensively remodelled. It has not been enlarged, though this edition contains five new chapters on acute dilatation of the stomach, acute pancreatitis, obstruction of the mesenteric vessels, sigmoiditis and perisigmoiditis, and dislocation of the pelvis, many technical changes and new methods, and 92 additional figures; but on the other hand, many of the old figures have been reduced in size, most of the photographs eliminated, and the text in places abridged."

This new edition of a well-known book is admirable. Previous favorable criticisms must be repeated. The book is essentially French. It is, after all, practically a manual of operative surgery, since all surgical procedures are, now-a-days, at least, potentially urgent. Most of its references are to French and continental authorities. No mention is made of the exceptionally efficient American bone instruments. There are, it is true, a few references to articles written by American surgeons, but they form a very small proportion. This is, of course, not necessarily a disadvantage, for the American reader is naturally familiar with American literature, and glad to get a large number of references to continental authorities.

The printing of the book is equal to the best that we have come to expect from the American Press, and the volume is lavishly illustrated by accurate and artistic pictures, essentially French in detail and finish.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, MARCH 11, 1915.

Editors.

Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D. } *For the Massachusetts Medical Society.*
Frederick T. Lord, M.D. }

Committee of Consulting Editors.

Walter B. Cannon, M.D.	Allan J. McLaughlin, M.D.
Harvey Cushing, M.D.	Robert B. Osgood, M.D.
David L. Edsall, M.D.	Milton J. Rosenau, M.D.
Reid Hunt, M.D.	Edward C. Streeter, M.D.
Roger I. Lee, M.D.	E. W. Taylor, M.D.

Advisory Committee.

Edward C. Streeter, M.D., *Boston, Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams, M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager.*

126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE QUESTION OF EARLY MARRIAGE.

In the issue of the Journal for January 28, we published an editorial on "The Biologic Aspects of Early Marriage," in which we referred to the offer of a reward of $200 by Caspar L. Redfield of Chicago, for the reporting of human cases "where rapid breeding led to good results from an intellectual point of view." The time limit of this offer expired without the production of evidence of the kind required, but at the annual meeting of the Council of the American Genetic Association it was voted that, the question being still open, Mr. Redfield be invited to extend his offer for another year. This extension was granted and the offer is now open until December 31, 1915.

In our previous editorial we commented at length on Mr. Redfield's position as evidenced in his paper on "The Results of Early Marriage" in the *Journal of Heredity* in July, 1914. This position is further discussed in another contribution on "The Early Marriage Question" in a later issue of the same publication. In support of the contention in favor of the twenty-five year generation, as made in the Journal, is cited an article by R. H. Johnson in the *Journal of Heredity* for March, 1914.

"Suppose a generation to be 25 years or 33 1-3 years respectively in two different stocks, and that all persons marry and each couple have four surviving children, or two for each parent. The result is that the 25-year stock constitutes two-thirds of the population at the end of a century."

"By a combination of these two causes (to which might be added the lower death-rate claimed among the children of young parents), the result is, as Galton says, that 'if the races best fitted to occupy the land are encouraged to marry early, they will breed down the others in a very few generations.'

"Something similar has happened in New England and many other regions, where a fertile foreign stock, marrying early, has nearly supplanted the earlier stock. The fact has frequently been a text for eugenic sermons."

It was in reply to this paper that Mr. Redfield's offer was originally made, he holding the converse position. Among the pedigrees submitted in competition for this offer were several by J. B. Nicklin, Jr., of Chattanooga, Tenn., including those of the present royal families of England and Germany, the Austrian, Swedish and Danish royal families, the Washington, Lee, Taylor and Hamilton families of America. Mr. Nicklin believed that these proved the production of four, five and six desirable generations in a century. Mr. Redfield, however, did not regard these data as fulfilling the terms of the offer, his objections being as follows:—

"First, the persons named are not among 'the 2000 or 3000 intellectually eminent men known to history,' whose names are recorded in ordinary encyclopedias because of intellectual achievements. Not all royal personages noted in cyclopedias are there because of their intellectual superiority.

"Second, the pedigrees given are neither complete pedigrees, nor in the tail-male lines for partial pedigrees.

"The generations of the offer are periods of time between parent and offspring. Except in the last case, you give four such periods, and consequently four generations, instead of five, as you represent it.

"Examples of breeding much more rapid than those you give are quite common, as among the 'Jukes' and other degenerate families of the United States; also in Asia, Africa and Polynesia. Marriages between boys less than 17 and girls less than 15 are the ordinary thing in many places. But the trouble with that kind of breeding is that it does not produce superior individuals. When we come to the greatest men, they are not produced when the breeding is as rapid as three generations to the century. My money offer was for the purpose of finding any possible exception, if it existed."

Other similar pedigrees were submitted by Mrs. Elizabeth Sourdry of St. Louis, Mo. The following were Mr. Redfield's objections and comments on her material:—

> "The first objection is that these men are mental mediocrities and not intellectual giants. William II is prominent because he inherited the position of emperor, but he has to his credit no intellectual achievements. If you are going into royalty I think that you should take such men as Augustus, Peter the Great or Gustavus Adolphus.
>
> "Consider Moses, who not only controlled an unruly mob but who formulated moral laws and regulations which are good after nearly 3500 years.
>
> "Consider Confucius, whose intellect produced the moral precepts which have guided hundreds of millions for more than 2500 years.
>
> "Consider Aristotle, who was the main scientific authority for the world for more than 1000 years.
>
> "Imagine a sickly little fellow sitting in Washington and changing this republic into a monarchy by the sheer force of his intellect. Imagine his influence with Congress being so great that the country would officially confer on him a title certifying the profound respect all entertained for his surpassing wisdom. That would be Augustus of Rome."

After careful consideration of the letters submitting these two groups of data, the council of the American Genetic Association decided that the requirements of the offer had not been fulfilled. Subsequent to this decision Professor Johnson further submitted a letter reiterating his position, in part as follows:—

> "Mr. Redfield is quite safe in holding that in illustrious stocks the generations are long. It is just this that I contend calls for remedy. To conclude from this, however, that late children are superior mentally is wholly unwarranted. Such late births will still be found to be prevalent with the superior, irrespective of whether late children shall be shown to be equal or superior to early children from the same parents. The reasons for these delayed marriages and births are now too familiar to call for repetition here.
>
> "May I in turn suggest to Mr. Redfield a sound method of testing his hypothesis? Ascertain the number of brothers and the ordinal position among these of all the men in some standard collection of the names of illustrious men which will furnish the desired information. Sisters, owing to the different chance of becoming renowned, and half-brothers and step-brothers are not to be admitted. Compare the age of the parents at the birth of the most illustrious with the average age of his brothers in each family. Aside from this, even if Mr. Redfield's hypothesis prove correct, is is still true that inferior stocks are producing more early children as well as children in general than are the superior stocks. The mere lengthening of the generations of all stocks will not change the ill-balanced production of the next generation. It is necessary to increase the reproduction of the superior relative to the inferior, no matter to what other device resort may be had. Later marriage of the superior as compared with the inferior is, therefore, necessarily dysgenic."

As a matter of fact it seems that probably Professor Johnson's position is more fundamentally sound than that of Mr. Redfield's, though his contentions cannot be considered as yet proved. What is really desirable is not the production of the largest number of individuals of intellectual or other eminence, but of a community with a minimum of defectives and a maximum of physically and intellectually wholesome individuals of the most durable and most highly potential stock. The precise method by which this may be attained is yet to be determined, if indeed it be determinable otherwise than by slow and natural evolutionary processes.

◆

A NEW ERA IN CHINESE MEDICAL EDUCATION.

So intently has the spirit of scientific medicine in America centered its attention on Europe in matters of professional regard, that affairs of epochal importance may occur in other parts of the world without the merest recognition. In spite of the rapidly developing relations between China and America, the medical profession of America has kept itself comparatively uninformed of medical progress and conditions, as well as of medical opportunities in China. It is *a priori* true that the medical future of China and her advance in paths of sanitary and public health reform, are bound up in the development of a native Chinese school of medicine, which, having been trained by the West, shall be able and eager to apply that training, under most favoring circumstances of popular support, and knowledge of local conditions, to the upbuilding of Chinese social and sanitary life. Western medical education in China has been thus far a protegé of the missionary movement, and while the Chinese government and local institutions have made various more or less successful attempts, various defects have to a great extent nullified both types for effective service.

There has, however, within the past year been put in operation a plan for medical education which avoids the defects of both the older systems and which has many advantages they could never claim. At the biennial convention of the China Medical Association held at Shanghai, Feb. 1 to 5, 1915, Dr. F. C. Yen (Yen, F. C. An Example of Coöperation with the Chinese in Medical Education) described the plan and inauguration of the Hunan-Yale Medical School at Changsha in Hunan Province in Central China. Dr. Yen is a senior member of the medical staff of Yale-in-China. Because of his Western professional training and his influential relations in China, he combines in a singular degree the advantages of modern scientific ideals and of leadership with the Chinese. The Hunan-Yale Medical School exists under a coöperative contract between Yale-in-China and the Hunan provincial government. The peculiar advantage of such coöperation lies in the fact that it enlists the good will of the Chinese, removes suspicion by making them partners, secures indispensable practical aid, and gives the institution permanency.

Dr. Yen describes the seven years of preparation for this agreement on the part of Yale by an unvarying policy of cultivating the friendship and confidence of the Chinese. The result was that the announcement in 1913 of a large gift in America for a new Yale Hospital was followed at once by a petition from the Chinese that Yale-in-China should coöperate with the provincial government in a scheme for medical education in Changsha. "On their own initiative, over eighty of the prominent gentry of Hunan, led by provincial officials, sent a joint petition to the governor, requesting him in the name of the Hunan government to enter into a working agreement with Yale for the immediate establishment of a medical school. This request was granted and the agreement was signed in July, 1913, between Yale on the one side and the governor representing the Hunan government on the other. Thus was born the Hunan-Yale Medical School."

Under this agreement, provision was made in addition to a medical school, for two nursing schools for men and women respectively, a teaching hospital, and a research institute for the investigation of public health problems and diseases peculiar to China. The government undertakes to provide school buildings to cost $156,000, Mex., nine acres of land valued at $50,000, Mex., and an annual sum for maintenance of $50,000, Mex. Yale's share is to supply a hospital costing $150,000, gold, and a staff of fifteen doctors. To avoid establishing a precedent which might be turned to ulterior ends by other persons wishing to make direct contracts with provincial governments, the Peking government required that the Hunan-Yale agreement should be drawn between Yale and an incorporated association of Chinese, including the provincials and representing the provincial government. The obligations of this association are borne by the government.

The institution is controlled by a board of twenty trustees, half Chinese and half from Yale. An executive committee of seven transacts current business. The contract is to last ten years on trial, and if found satisfactory, is then to be subject to indefinite extension. The Chinese members of the board of trustees have voluntarily placed entire authority in technical matters with the Yale medical staff. They have also insisted that English must be the teaching language of the school.

The Hunan-Yale coöperative agreement for medical education has undergone severe testing and is the stronger for it. It has twice been submitted to the cabinet of Yuan Shih-kai and twice approved. It has been approved and supported by three successive governors of Hunan province. It has received formal sanction and approval from the Boards of Education, Finance, and Foreign Affairs of the Chinese national government. It has been supported by two parties of opposite political views in Hunan. The government has paid $20,000 of the first installment and has given outright buildings valued at $50,000, Mex., for the use of the school and hospital, pending the erection of permanent buildings. A medical preparatory course and the two nurses' training schools are now in operation, and the Yale Hospital is under the control of the joint board.

It is significant that the Hunan-Yale medical agreement has been inaugurated at the initiative of the Chinese in a province which is perhaps the most independent and haughty of all China, and that it is being supported with enthusiasm and loyalty by the Chinese. It is entirely without precedent in China and marks the inauguration of a new era in the medical development of China. Dr. Yen closes his paper with the significant words: "The time has come when coöperation with the Chinese is no longer an idle dream, but may be materialized in fact. The Chinese are getting to know the foreigners better and are prepared to unite with them in such movements as this. But the initiative must come from the foreigners. Where coöperation is sought it is given, but the degree of success must necessarily depend on the spirit in which it is entered. In proportion to the fairness, loyalty and enthusiasm of the foreign party, will be the cordiality, interest and support of the Chinese."

◆

THE MEDICAL EXAMINATION OF TRANSPORTATION OPERATORS.

The really great progress made in the perfection of mechanical contrivances in recent times, has given a false sense of security in trusting the safety of operation to the automatic in mechanisms, and in neglecting the human physical element almost entirely. This is the ideal in mechanics but it disregards the fact that human physical development and human acuity and refinement must keep pace with the mechanical refinements, and that the latter is the outgrowth of the former. The highest degree of safety in the operation of mechanical devices is attained only with a high degree of human efficiency and refinement. The more accurate and the finer the instruments, the more delicate must be the human forces which control them. The greater the force put into harness by mechanical genius, the greater element of destruction it may become unless under the control of the most perfect physically and the most well-balanced mentally that advanced regulation can enforce.

This indication has been long recognized and in a measure been met in navigation, especially in the matter of visual acuity and color perception of those actually engaged in the navigation. The perception of red and green is of the utmost importance because these colors are used to indicate danger, safety and direction. Blindness to these colors makes navigation almost impossible. The control of the navigable waters by the central government allows uniformity of examination of navigators to see that the visual and color requirements are carried out. The color and visual requirements are rather gross and should not embrace the only attempts at the selection of human fitness comparable with the mechanical magnitude.

The alarming increase in land transportation disasters calls attention to the fact that railroad and other vehicles do not have even the little regulation that navigation has, even though transportation on land is as great as, if not a greater medium than, on water. To require a pilot to conform to the color and visual requirements when his field of operation is wide, his speed comparatively slow, and with assistants usually many, should require engine and other transportation operators, who control mechanisms of high speed and higher destructive power, to conform likewise to a uniform standard of fitness, maintained by constant supervision. This should apply to automobile operators who run between the States. All forms of transportation which engage in interstate traffic of any kind are under the control of the central government, which has sole and plenary powers in such matters. All persons, therefore, engaged in the operation of vehicles in interstate traffic should be required to undergo periodic examination by medical officers of the Public Health Service, who already conduct the examination of navigators. And the enlargement of the physical requirements, to embrace not only the visual and color elements, but all physical and mental elements, would guarantee the highest efficiency and the greatest safety.

Evidence of alcoholic indulgence should be a bar to license. The heat and the stress of a "run" of locomotive operators react badly on those addicted to alcohol, either steadily or dipsomatically. Many examples of poor judgment, ignoring of signals, physical inability and exhaustion would be eliminated. In this respect the Navy has set an excellent example. Alcoholic sclerosis and the allied mental phenomena and the consequent instability are not compatible with work of this nature.

A mental examination would in many cases detect incipient paresis and other forms of psychoses which must be large elements in inefficiency of operators.

Legislation for the uniform control of the operators of vehicles engaged in interstate traffic is a logical measure of progress—no issuance of license or renewals except after successfully passing a rigid medical examination. This should include the physical, taking into consideration the kind of vehicular operation engaged in, and emphasizing cardiovascular scleroses; a mental examination for all forms of mental aberration, but especially general paresis, alcoholic and drug intoxications and psychoses. The time may come, let it be hoped in the near future, when persons will be barred from these occupations because temperamentally unfitted.

THE IMPORTANCE OF PREGNANCY CARE.

THE lowering of the rate of infant mortality everywhere that special attention has been given to it, although in itself very encouraging, should not blind us to the immense amount of loss of life which is never recorded at all, as from abortion and miscarriage; or but scantly noticed, as in the high percentage of stillbirths which pass unconsidered in reckoning the death-rate. In every hundred pregnancies probably at least 10% fail of fruition, and between 30 and 40 children out of every 1000 are born dead. Without counting these stillbirths the deaths of children during the first month of life amount to between 35% and 40% of the total deaths occurring in the first year, and the greater part of these early deaths are due to prenatal causes or to accidents of childbirth, most of which are preventable.

The value of pregnancy care is shown very graphically by the statistics for five years of such work, given in the last report of the Committee on Prenatal Care of the Women's Municipal League of Boston, for, as this committee gave no obstetrical care to patients until after the date of this report, pregnancy care may fairly be considered as being largely responsible for the results. One nurse alone was employed, as the work has always been carried on as an experiment,—to test methods rather than to accomplish results on a large scale.

Cases carried safely to labour	1512
Death during labour	0
Deaths during childbirth	9
Percentage	.6%
Miscarriages	3
Percentage	.19%
(No miscarriage has occurred during the past 8½ years.)	
Babies born	1522
Average birthweight including premature babies	7 lbs. 11 oz.
Premature babies including twins and still births, percentage	1.7%
Stillbirths including premature births for two years	1.8%
(Less than half that of the rest of the City of Boston.)	
Deaths of babies born alive but dying in first month	43
Percentage	2.8%
Deaths of babies born alive but dying in first month throughout Boston, percentage	4.8%
Cases of eclampsia	4
Percentage	.2%
Cases of impending eclampsia—diagnosed as such by hospitals and physicians........1st year	60
Steadily decreasing until these number in the 5th year	2

Although no care has been taken of patients by the committee after the onset of labor, one visit has been paid at the end of a month after the birth of the infant to ascertain the method of feeding and the condition of the child. The results follow:—

Breast-fed, wholly, percentage	84.7%
Breast-fed, partly, percentage	4.5%
Total	89.2%
Bottle-fed	10.8%
Well at the end of month, breast fed wholly	97.5%
Well at the end of month, breast-fed partly	92.3%
Well at the end of month, bottle-fed	72.4%

These figures speak for themselves and further comment is unnecessary.

ANNOUNCEMENT.

WE desire to call the attention of our readers to certain alterations and, we believe, improvements in the current literature department of the JOURNAL. Beginning with this issue, the custom is abandoned of reprinting the table of contents of each periodical reviewed, in the belief that this repetition is really not of sufficient value in proportion to the space it requires. Instead, the entire space available for current literature is, and will be, devoted to the publication of more elaborate and carefully prepared abstracts of selected articles, each under the title of the article, with reference to its place of publication. Further, these abstracts are grouped under appropriate departmental headings, so that these columns will present, each week, a comprehensive topical survey of the field of recent medical literature. The method thus adopted is essentially that which has proved successful in the English and other foreign medical publications.

After careful consideration, it has been determined to place the current literature columns in the advertising pages of the JOURNAL. It has been called to our attention by various readers that, to them, the value of the current literature abstracts lies chiefly in clipping these abstracts from the JOURNAL to file in a permanent index or card catalogue form. With the current literature in its former position in the body of the text, this could not be done without mutilating the JOURNAL and making it unfit for subsequent binding and permanent preservation. By placing the current literature in its new position, this clipping is made possible without such mutilation of the permanent portion of the JOURNAL. It will be observed also that the columns are so arranged that no two abstracts come back to back, so that all may be clipped without injury to any.

We believe that the value of current literature abstracts is greater for such use at the time of publication than for binding with the JOURNAL after the original material which they represent has passed into medical literature and is fully recorded in bibliographies and indices. Moreover, to place the current literature department in this way is an aid in maintaining and raising the high ethical standard of advertising which the JOURNAL has undertaken to observe. We believe that such a mode of arranging and displaying the current literature abstracts will make them in every way more attractive, serviceable and valuable to our readers.

MEDICAL NOTES.

RED CROSS TUBERCULOSIS FUND.—Report from Washington, D. C., on Feb. 26 announces that the sale of Red Cross seals in 1914 amounted to a total of $2,320,000, which will be devoted to anti-tuberculosis work in the United States. Over seven million more seals were sold than in 1913.

AMERICAN MEDICAL ASSOCIATION.—The 66th annual convention of the American Medical Association will be held at San Francisco from June 21 to 25, inclusive. The railroad agencies have organized and announced a series of various trips that may be made from Eastern cities, taking in not only the convention, but a number of interesting points along the routes in both directions. Various combinations will be made to suit the time, convenience and interests of different individuals. It is hoped and expected that this opportunity, combined with the attraction of the Panama-Pacific Exposition, will make the attendance at this meeting the largest in the history of the association.

EUROPEAN WAR NOTES.—It is announced that thirty hospital ambulances, with a complement of surgeons and nurses, are shortly to be sent from France to Russia to assist the Russian army medical corps in its care of the wounded.

It is reported that the American British War Relief Association has recently sent $800 worth of ether and chloroform and 12 cases of medical supplies for distribution and use in the military hospitals at Rouen and Havre, France.

On March 5 the total of the New York Belgian Relief Fund amounted to $952,877.15; the New York Red Cross fund to $464,796.11; and the Committee of Mercy fund to $122,125.72.

On March 5 the New England Belgian Relief fund amounted to $225,539,86; the Polish Relief fund to $24,711.22; and the Lafayette fund to $10,023.00.

Report from London on March 2 states that since the beginning of the war only 569 deaths have been caused by disease among the British troops. Of these, only 51 have occurred among troops at the front. The remaining 518 have been among recruits in training in England, of whom 351 have died of pneumonia. The following table presents the statistics of the incidence and mortality of the important diseases among British troops at home and at the front since the outbreak of the war.

	Expeditionary *Force.		Troops in †U. K.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus fever	0	0	0	0
Typhoid fever	‡625	‡49	262	47
Cholera	0	0	0	0
Smallpox	‖	‖	1	0
Scarlet fever	195	4	1379	22
Diphtheria	‖	‖	783	6
Measles	§175	§2	1045	65
Dysentery	‖	‖	215	1
Pneumonia	‖	‖	1508	351
Cerebrospinal meningitis	‖	‖	62	26

---

* Up to Feb. 11. † Up to Jan. 31. § Including Indian troops—cases, 5; deaths, 0. ‡ Including Indian troops—cases, 25; deaths, 4. ‖ Returns not at present available.

ITEMS OF MEDICAL LEGISLATION.—On Feb. 24 the National House of Representatives passed a bill authorizing the establishment, under the United States Public Health Service, of a federal home for lepers. This bill has now been sent to the Senate.

On Feb. 24, the New Jersey Senate passed a bill advocated by the Rockefeller Institute for Medical Research designed to legalize animal experimentation in that state. This bill has now been sent to the House of Representatives.

On Feb. 27, the committee on public health of the Massachusetts General Court reported favorably a bill permitting the issuance of a search warrant for any kind of habit-forming drugs. The bill is aimed to supplement the action of the Harrison bill in suppressing the illegal use of such drugs.

On Feb. 23 a hearing was held before the committee on public health on the so-called interstate reciprocity bill, whereby it is provided that physicians registered in one state may practice in another without reëxamination and registration. This bill was opposed by Dr. Walter P. Bowers and Dr. Arthur K. Stone, the respective secretaries of the State Board of Medicine and of the legislative committee of the Massachusetts Medical Society. Dr. Bowers said in part:—

"This bill is reasonable on the face, but in a number of states in which it has been tried it has been found that a man, incompetent in one state, has gone elsewhere on the reciprocity basis. It is an imposition on the state to which he goes, for he may take an easy examination in one state and go to another where the standard is higher, and thus compete with men much better trained. A well-equipped doctor does not object to taking another examination, for his previous record has great weight in passing him."

On March 2, a hearing was held at the State House before the legislative committee on public health, relative to a bill (Senate No. 228) proposed by the Massachusetts Dental Society, creating a new board of dental examiners, establishing a higher standard of dental education, and providing for the registration of so-called dental nurses. The bill was advocated by various dentists and opposed by others, among the latter being Dr. Thomas J. Barrett of the Massachusetts State Board of Registration in Dentistry. So much criticism of the bill was made that it was virtually agreed to draft a new measure, to be presented at another meeting of the committee on Monday of this week, March 8.

Harvey Lecture.—The tenth and last lecture in the current course before the Harvey Society will be delivered at the New York Academy of Medicine on Saturday evening, March 13, by Dr. Elliott P. Joslin of Harvard University on "Carbohydrate Utilization in Diabetes Based upon Studies of the Respiration, Urine and Blood."

BOSTON AND NEW ENGLAND.

Harvard Cancer Commission.—The recently published second annual report of the Collis P. Huntington Memorial Hospital records the activities of this institution and of the laboratories of the Harvard Cancer Commission for the year ended June 30, 1914. During this period a total of 150 out-patients and 48 ward cases with carcinoma were treated, and including cases of sarcoma, benign growths and other conditions, a total of 130 house patients and 230 out-patients were treated. The reports of Dr. Tyzzer, Dr. Ordway and Dr. Duane record the scientific activities in cancer and radium research. Dr. Duane's apparatus for the collection and purification of radium emanation is illustrated with two full-page plates. The report concludes with a list of the thirty-nine publications issued to date by the Harvard Cancer Commission.

Appointment of District Health Officers.—On March 1, with the approval of the Massachusetts Public Health Council, Dr. Allan J. McLaughlin, state commissioner of health, announced the appointment of the eight district health officers who are to have charge of the administration of public health affairs under the direction of the state department of health. These appointees are as follows:—

Dr. Lyman A. Jones of North Adams, Dr. William H. Coon of Haverhill, Dr. Merrill E. Champion of Arlington, Dr. Adam S. MacKnight of Fall River, Dr. William W. Walcott of Natick, Dr. Charles E. Simpson of Lowell, Dr. John S. Hitchcock of Northampton and Dr. Frank L. Morse of Somerville.

These physicians, who will be required to give their entire time to the work, will be assigned to the eight new districts established by the bill under which the present state department of health was organized. They will begin their duties on March 15. These appointments complete the working organization of the department.

Hospital Bequests.—The will of the late Dr. Henry Cecil Haven, filed for probate in Boston on March 2, contains a bequest of $5000 to the Children's Hospital of Boston. Upon the death of a beneficiary the testator's real estate at Nahant, Mass., will revert to the Children's Island Sanatorium of Marblehead, Mass.

Epizoötic of Foot and Mouth Disease.—On February 28 it was announced that two new cases of foot and mouth disease had been discovered at Waltham, Mass. Quarantine has been established in fifty-one communities, in thirty-two of which the disease was discovered in the first epizoötic and in fifteen of which it is now present. During this second outbreak 640 animals have already been slaughtered.

"The Animal Industry Department has sent out letters to the farmers of the Commonwealth, requesting them to maintain a strict quarantine on their own premises. It is the opinion of the department that the disease has been spread more by human beings than by the transportation of infected cattle."

On Feb. 28 also three new cases of foot and mouth disease were discovered in Oneida County, near Utica, N. Y. On March 1, 62 cattle of an infected herd were slaughtered at Woonsocket, R. I. On March 2, another case of the disease was discovered at Everett, Mass., and a new case at Fall River, Mass., making the sixteenth community in Massachusetts involved in this recrudescent epizoötic.

On March 2, the ways and means committee of the Massachusetts House of Representatives reported favorably, with two amendments, the resolve (House No. 1729) accompanying Gov. Walsh's recent special message for compensation for cattle killed and property destroyed in controlling the foot and mouth disease in this state. The text of the resolve and amendments is as follows:—

"Resolved, That there be allowed and paid out of the treasury of the Commonwealth, from the ordinary revenue, a sum not exceeding one hundred and fifty thousand dollars, to be expended under the direction of the Commissioner of Animal Industry, for the payment of claims for cattle killed and property destroyed during the present epidemic of the foot and mouth disease; provided, that in cases where an appraisal has already been made by the State Department of Animal Industry or by the Federal Department of Agriculture, and assented to by the owner, the payment shall be limited to 50% of the appraised value; and that in all other cases the payment shall be limited to 50% of the health value of the cattle, to be determined by the Commissioner of Animal Industry, subject, both as regards cattle and other property, to the rights of arbitration and petition in the same manner as provided by section twenty-six of chapter ninety of the Revised Laws, relative to the destruction of animals afflicted with tuberculosis, so far as applicable. In no case shall the percentage of value to be paid by the provisions of this act, added to the amount allowed by the Government of the United States, exceed the value as hereinbefore determined.

"One amendment to the original resolve strikes out the provision that 'in cases where the owner gave a purported bill of sale to the Commonwealth the owner shall be entitled to interest from the date of such bill of sale to the time of payment.' It is stated that it has not been customary for the Commonwealth to pay interest.

"The other amendment changes 'per cent.' to 'percentage.' A 'percentage' is said to mean a sliding scale."

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending Mar 2. 1915: Diphtheria, 68, of which 14 are non-residents; scarlatina, 87, of which 14 are non-residents; typhoid fever, 9; measles, 154; tuberculosis, 46, of which 2 are non-residents. The death-rate of the reported deaths for the week was 17.42.

Obituary.

HENRY CUTLER BALDWIN, M.D.

Dr. Henry C. Baldwin died suddenly February 25, in his fifty-sixth year. Although he had been in failing health for some years, he had so successfully concealed this fact from his friends, and even from his family, that his death was wholly unexpected.

Dr. Baldwin was born in Roxbury, Mass., October 27, 1859, of excellent Colonial ancestry. He was graduated from Harvard College with high rank in the class of '80, which numbered Theodore Roosevelt among its members. He at once entered the Harvard Medical School, where he was also distinguished as a scholar. He thereafter served as surgical house pupil at the Massachusetts General Hospital and later, for a time, was an assistant physician at the McLean Hospital. Before entering upon his service at the latter institution, he made a trip around the world, the remembrance of which was always a source of satisfaction in his later years. Again, after leaving the McLean Hospital, he went abroad and took a course at the Rotunda Hospital in Dublin and also made studies and observations in the Salpêtrière in Paris and elsewhere on the Continent. Returning to America, he taught for a period at the Harvard Medical School and soon thereafter became associated with Dr. James J. Putnam in the neurological department of the Massachusetts General Hospital. He rose through the various ranks until he became one of the neurologists to the hospital, a position which he held at the time of his death. For many years he was officially connected with the Free Hospital for Women, but finally resigned to devote all his energy to the work of the Massachusetts General Hospital clinic.

Apart from his hospital work, in which his enthusiasm never flagged, he was, at one time, a member of Mayor Quincy's advisory board of visitors to public institutions and chairman of the board of trustees of the Boston Insane Hospital. These public functions he performed in addition to his active private practice, which concerned itself largely, but by no means exclusively, with disorders of the nervous system. He was a member of the Massachusetts Medical Society, of the American Medical Association, of the American Medico-Psychological Association, of the American Neurological Association, of the Boston Society for Medical Improvement, and of the Boston Medical Library. He was especially interested in the Boston Society of Psychiatry and Neurology, of which he was, at one time, president. At a recent anniversary dinner of this society only a few weeks before his death, he took charge of the music and sang with his accustomed vigor.

Apart from his professional interests, which always occupied his chief attention, he took great pleasure in music and was himself the possessor of an excellent voice. He was a member of the Cecilia Society, which he joined in 1883, singing at the first concert of the society in that year. He was several times a director of the society and, for the past three years, had been very active in maintaining its integrity. He also belonged to the so-called "Doctors' chorus" and the Harvard Alumni chorus. Vocal music was his special delight and relaxation. A further characteristic interest was his love for animals. He always had dogs of recognized lineage and was an enthusiastic horseback rider. Although in certain respects eminently social, he cared little for what is popularly called society; his work and his home life remained throughout his chief interests.

Of all his activities, his relation to the Massachusetts General Hospital undoubtedly took first place. He was an extremely loyal friend to the institution and worked always for its best interests. He was never neglectful of what he considered his duty, and up to a few days before his death was seeing patients and prescribing treatment as he had been doing for nearly three decades. He was a strict disciplinarian and felt very strongly that the welfare of the hospital depended upon the maintenance of this discipline. While he insisted that his subordinates should obey the rules strictly, he never shirked his own responsibility or regarded himself as exempt from the regulations which he imposed upon others. The hospital has lost in him a loyal and devoted friend.

He was not a voluminous writer and he did not often take part in discussions at medical meetings, but his interest in the progress of medicine remained unabated. His strength lay in his power of organization and in his capacity to accomplish work which he set himself. He was indefatigable in his treatment, especially by mechanical means, of certain stubborn nervous disorders, and accomplished at times what seemed impossible in overcoming apparently hopeless muscular incapacity. He was no less active during the final years of impaired health than he had been before, and bore his increasing ill health courageously, with the determination, largely successful, of keeping from his colleagues the serious disability from which he was suffering. Although undoubtedly aware of his desperate condition, even on the day of his death, during his periods of consciousness, he was normal in mind and apparently wholly unconcerned.

As a man, few knew him intimately, but those who did found in him much to respect and admire. A widow and one brother survive him.

* * *

APPOINTMENTS.

University of London.—*Dr. Edward Barclay-Smith* of Cambridge, has been appointed professor of anatomy at Kings College in succession to Dr. Watterston; and *Dr. E. P. Cathcart* of Glasgow has been appointed to succeed Dr. Leonard Hill as professor of physiology at the London Hospital Medical College.

Miscellany.

WORK OF DR. CARREL IN FRANCE.

The Rockefeller Institute for Medical Research has recently communicated the following information relative to the work of Dr. Alexis Carrel in France. Dr. Carrel has now been detached from the Lyons Hospital and placed in charge of a hospital at the Campaigne near the northern line of battle.

"For the use of the patients in charge of Dr. Carrel and his assistants, the government has requisitioned a hotel, which has been converted into a hospital with accommodations for about one hundred persons. The government will provide administrative officers as well as competent surgeons suggested by Dr. Carrel, to carry on the regular work, thus leaving Dr. Carrel free to perform his characteristic operations, especially in the line of transplanting tissues, blood vessels and nerves, and blood transfusion, and to conduct the laboratory studies which are about to be undertaken.

"In order that the work under Dr. Carrel may not only be of the greatest effectiveness at the moment, but may be made permanently available to the world of science, the Rockefeller Institute is equipping Dr. Carrel's hospital with complete apparatus for research in the bacteriological, pathological, chemical and surgical conditions which may arise.

"Dr. Carrel, who was spending his vacation in France at the outbreak of the War, immediately offered his services to the French government, which were accepted. He was detailed to the military hospital at Lyons, at which there were referred to him especially the wounded with injured blood vessels and nerves, in view of the research work which he had done in these classes of injuries. From the application of the method which he discovered for suturing and transplanting blood vessels and tissue, it was possible to save limbs which otherwise would have inevitably been lost. Dr. Carrel has now been given special facilities as near as possible to the line of battle, because of the unusual conditions which have developed in this conflict incident to trench warfare.

"It has been supposed that all future wars would yield small numbers of infected wounds. The facts, however, are that no previous war has yielded such a large number of infected wounds as the present one.

"The reasons for this under the old conditions are developed to be as follows: poor hygienic facilities, infection of the wounds caused by the surgeons who carried the infecting germs on the operating instruments, dressings, etc., the introduction of infected material from without at the time of injury, were the sources of infection. In the present case the infections occur because the injured in trenches receive their injuries from missiles which carry dirt and soiled clothing into wounds; and also because in many cases it is days before the injured can be removed. The infections have also been of an unusual character. Formerly they were usually suppuration and pus formation. Now they are commonly due to the development of gas in the tissues and to tetanus or lock-jaw.

"This gas infection is very serious in form. It originates in bacteria of the soil, particularly soil which has been under a high state of cultivation for a long period of years. The technological term applied to the condition in gaseous phlegmon. The bacteria which cause it do not grow except in the absence of atmospheric air which the injured tissues provide. In their growth they break up the constituents of the tissues and impart a gas in which hydrogen forms a large part. This gas penetrates the tissues and carries the infected material further and further and may penetrate into the blood, when it soon causes rapid death.

"Hitherto this class of infection has been so rare that adequate means for its prevention and cure have hardly been worked out. It is in order that he might have access to this class of cases, now, unfortunately, so numerous, that Dr. Carrel has been transferred to the northern field of war. It is in order that, in addition to the regular routine work of the care of the wounded, he may study these infections especially, he is being provided by the Rockefeller Institute for Medical Research with the medical equipment requisite for this work.

"In carrying out the enormous work incidental to military operations one government alone could hardly undertake at this critical period to organize hospitals and laboratories for conducting research work. They must be quite content to deal with conditions as they arise. It is just there that Dr. Carrel's peculiar qualifications come in, and in that respect that the contribution of the Rockefeller Institute is largely made.

"Hence it is that he is to have a staff consisting of bacteriologists, chemists and technicians, forming a laboratory unit in addition to the regular surgical unit of the hospital. He is fortunate in being joined by Dr. H. D. Dakin, who has been for many years in this country and has a distinguished reputation as a chemist. He has been assigned to take charge of the chemical part of this humane work of investigation.

"The Rockefeller Foundation has just voted an appropriation of $20,000, to be used under the direction of the Rockefeller Institute, in furthering medical research work under war conditions.

"The Institute has had many appeals made to it for serum for use in the treatment of meningitis and dysentery and these serums have been distributed freely."

CO-OPERATION OF THE CLERICAL AND MEDICAL PROFESSION.

As the result of a suggestion in the editorial on "The Minister and the Doctor," published in the issue of the JOURNAL for Oct. 1, 1914 (Vol. clxxi, page 532), a committee was appointed by the Massachusetts Federation of Churches to confer with a similar committee of the Massachusetts Medical Society on the subject of coöperation between the clerical and medical professions in the solution of problems of public health. At a joint meeting of these two committees in Boston on Feb. 24, 1915, the following votes were passed as representing the opinion of the meeting:—

"1. That intimate and practical coöperation should be established and maintained between the Massachusetts Federation of Churches and the Massachusetts Medical Society for the purpose of improving public health in this Commonwealth.

"2. That the churches of every community (through their local federation, where one exists) should consult and coöperate with its physicians in matters of public health.

"3. That the fundamental need is that of a competent health officer in every city, township or group of towns.

"4. That whatever specific local needs in the line of health are discovered, should be taken up, both educationally and practically, by the coöperation of the churches and the physicians."

The committee representing the Massachusetts Medical Society consisted of Dr. Milton J. Rosenau, Dr. Annie Lee Hamilton, and Dr. Abbie Noyes Little.

Correspondence.

THE LABOR CLEAN MILK BILL.

CANTON, MASS., February 25, 1915.

Mr. Editor: I have read your editorial "The Labor Clean Milk Bill" in the issue of February 25th and am somewhat surprised that you recommend this bill for passage without more discussion.

At the present time it is absolutely possible to control the milk situation throughout the Commonwealth with the present powers given to local boards of health. They need no further authority.

For the past two years we in our town have been able to control the supply of milk sold in the town. This is our method: We license every dealer and producer. We examine the milk of every dealer both for cleanliness and quality at least once a month. His record for that examination is published each month in the local paper. Any dealer whose milk is below the standard is personally notified that he must improve. If his milk continues to be below standard, we prohibit his selling until such time as we are satisfied that he produces clean milk. We hold dealers responsible for milk coming from dairies outside the town. This method has proved satisfactory and efficient.

When I first heard of this bill, I wrote to Mr. Myron E. Pierce, counsel for the Massachusetts Milk Consumers' Association, stating the above opinion. This is a quotation from his letter in reply: "There is no particular need of the bill so far as the powers of local boards are concerned, but there is great need, it seems to me, of some such bill to give the State Board of Health adequate powers, etc."

Thus the bill seems to be one to increase the powers of the State Board of Health and not primarily one to enable us to obtain cleaner milk. This method of obtaining power for the State Board of Health seems to me questionable. I believe with many others that the State Board of Health should have more authority in all health matters but I do not believe they should have a little here and a little more there, given them by a series of various kinds of laws until it will be very difficult to know just how much power they do have in any particular case.

Let the State Board of Health be given adequate power in all health matters and over local boards of health, if you will, through some comprehensive legislation, but let us keep off the Statute books such unnecessary laws as this bill (Senate No. 78) will be.

It seems to me this bill should be further discussed before it is so heartily recommended.

Respectfully yours,
Dean S. Luce, M.D.

◆

SURGICAL INSTRUMENTS FOR THE EUROPEAN WAR.

Boston, March 3, 1915.

Mr. Editor: I beg leave to make a final report on the instrument-collecting enterprise which you have been kind enough to notice in your columns.

Through the coöperation of the profession and several of the surgical instrument makers in the city I was able to send away—mainly to Servia and Russia, but into France also—fourteen lots of instruments, consisting of three large barrels, two trunks, packing cases and a number of smaller packages. Besides these, Dr. Seabury W. Allen contributed a valuable Heinze X-ray apparatus in excellent order, and in addition to the gifts from the surgical instrument makers which have been previously acknowleged, a collection of instruments of value was sent me by the E. F. Mahady Company.

I desire again to express my appreciation of this kind coöperation.

Very truly yours,
James J. Putnam, M.D.

◆

A REJOINDER.

Dorchester, Mass., February 20, 1915.

Mr. Editor: Dr. Richard C. Cabot in the issue of Feb. 18, 1915, of the Journal, attempts to explain wherein his attacks upon the medical profession agree with and differ from those of Mr. George Bernard Shaw. Had he brought his criticism to the Medical Profession through its regularly constituted channels of communication rather than by way of the lay press it would not now be necessary for him to try to "correct misrepresentations." Even if the alleged short comings of physicians were of flagrant and serious a nature, was it wise or necessary for a member of the profession voluntarily to expose them before the ever curious public? Such methods undermine the confidence and lower the esteem in which we, as physicians, wish and ought to be held by the whole world. Constructive, helpful criticisms are always well received and desired by medical men when advanced in the council chambers of their medical societies and journals. However much one may coincide with Dr. Cabot's ideas relative to medical abuses, and his theories of medical reform, the profession may justly criticise and resent the manner chosen by him, in trying to bring about the changes which he advocates.

Very truly yours,
Samuel Crowell, M.D.

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession for the Week Ending Feb. 27, 1915.

CONTRIBUTIONS.

The Monmouth Medical Club, Monmouth, Ill..		$ 10.00
The Adams Co. Med. Soc., Quincy, Ill.........		42.00
Dr. Charles H. Smith, Uniontown, Pa........		25.00
Dr. Frederick J. Walter, Daytona, Fla.......		10.00
Dr. Austin C. Brant, Canton, Ohio..........		5.00
Dr. William D. Byrne, Chicago, Ill..........		5.00
Dr. Simon Levin, Lake Linden, Mich........		5.00
Dr. Miles F. Porter, Fort Wayne, Ind.......		5.00
Dr. J. B. Duncan, Pittsburg, Pa............		10.00
Dr. J. M. Patton, Vandergrift, Pa...........		1.00
Dr. N. B. Williams, Perkasie, Pa............		1.00
Dr. Wilson F. Phillips, Dorchester, Mass.....		5.00
Dr. Donald C. Balfour, Rochester, Minn.....		25.00
Dr. Austin Flint, Jr., New York, N. Y.......		25.00
Dr. Evan T. Steadman, Hoboken, N. J.......		10.00
Dr. John B. Nichols, Washington, D. C.......		10.00
Dr. Hermann G. Klotz, New York, N. Y.....		5.00
Dr. George P. Coopernail, Bedford, N. Y.....		5.00
Dr. K. I. Sanes, Pittsburg, Pa..............		25.00
Dr. Herman F. Vickery, Boston, Mass.......		25.00
Dr. H. H. Atkinson, Fordyce, Ark...........		5.00
Dr. Archibald MacLaren, St. Paul, Minn.....		25.00
Dr. Helen C. Putnam, Providence, R. I......		5.00
Maricopa Co. Med. Society, Phoenix, Ariz....		25.00
Dr. J. D. S. Davis, Birmingham, Ala.........		5.00
Dr. J. M. Popp, New Castle, Pa.............		5.00
Dr. Horace Binney, Boston, Mass...........		5.00
Dr. Warren Wilson, Northfield, Minn........		5.00
Dr. Gibbs Biscoe, Pendleton, Ark...........		5.00
Dr. Eleanore Boulton, Philadelphia, Pa......		5.00
Dr. O. L. Perry, Elkins, W. Va............		2.00
Dr. John P. Getter, Belleville, Pa..........		2.00
Dr. W. H. Witt, Nashville, Tenn............		5.00
Salt Lake Co. Med. Soc. Salt Lake City, Utah		50.00
New York Medical Union, New York, N. Y...		100.00
The Montgomery Co. Med. Soc., Dayton, Ohio		304.50
Receipts for week ending Feb. 27...........		$ 807.50
Previously reported receipts................		3579.00
Total receipts.........................		$4386.50
Previously reported disbursements...	$3575.00	
Disbursements, week ending Feb 27, 352 boxes of food @ $2.30.........	809.60	
Total disbursements..................		$4384.60
Balance		$1.90

F. F. Simpson, M.D., *Treasurer.*

In addition to the financial report for the week ending February 27th, the Treasurer would call the attention of the medical profession to the following letters:

"Baltimore, February 23, 1915.

"*My Dear Dr. Simpson:* Your letter of February nineteenth received. Madam DePage was in Baltimore for a short time last week. I told her something of the work that the medical men in this country were doing for their confreres in Belgium. She was much interested and most grateful for what had already been done. She is in this country commissioned by the King of Belgium, to whom her husband is personal physician, to do everything she could to secure contributions for her starving countrymen. Her account of conditions in Belgium is pathetically interesting. The needs of her country beggar description. While so much is being done and has already been done by this country, so much more must be done in order to save from starvation many hundreds of men, women and children. I wish it were possible for everyone to hear her account of what the Belgians are doing for themselves and of their gratitude for what is being done for them and, at the same time, get some sort of an appreciation of the magnitude of the need for more and immediate assistance. I feel sure it would result in a more prompt and generous response on the part of the profession than that which has already been made.

"Madame DePage herself is now on her way across the Continent and will visit as many cities and see as many people as possible in order to deliver her message.

"With kind regards,

"Sincerely yours,
"(Signed) J. M. T. Finney."

The efforts of the Committee of American Physicians for the Aid of the Belgian Profession are directed toward the relief of civilian physicians and their families in the northeastern or invaded portions of Belgium.

The purpose of Madam DePage is to establish additional field hospitals and further other Red Cross work in the southwestern part of Belgium.

In a recent letter she says: "The big conflict of the present war is still in the future; the most terrific fighting of all will come this spring. We must foresee the coming slaughter and be prepared to render instant aid to the thousands of wounded, friends and foes, who will fall within our lines."

The following is an extract from a letter from Dr. J. Riddle Goffe, under date of January 26, 1915:

"The fact that the English Government has announced that it will no longer continue to grant its monthly stipend to the British Commission for Relief in Belgium comes with somewhat startling disappointment."

The work of relief must now depend almost exclusively upon contributions from the United States. This means that our efforts must be redoubled if we are eventually to reap the benefit of what has already been done and carry the Belgian people through to the time when their own meager harvest can supply their actual necessities. It must be constantly kept in mind that the status of the 1,400,000 utterly destitute in Belgium are still standing in the bread line or hovering around the soup kitchens. A recent communication from Dr. Jacobs of Brussels, gives a heartrending picture of the condition of Belgian civilian physicians and their families.

The following letter is self explanatory:

"Dayton, Ohio, February 25, 1915.

"*My dear Doctor Simpson:* Pursuant to a resolution passed by The Montgomery County Medical Society, Feb. 5, 1915, authorizing a committee of three of its members, to raise a fund for the relief of the Physicians of Belgium and their families, the pleasant task was immediately started with the result indicated by the inclosed New York draft for $304.50. We but join you and the other members of your splendid Committee in the hope that every farthing of this offering may reach our afflicted brethren in Belgium and that the end is not in the far distance when lasting, permanent relief may be their heritage.

"Montgomery County Medical Society,
"By its Committee:
"J. Morton Howell,
"George Goodhue,
"C. L. Patterson.
} *Committee.*"

SOCIETY NOTICES.

Middlesex South District Medical Society.— A special meeting of the Society will be held at the Robert B. Brigham Hospital, Parker Hill Avenue, Brookline, on Wednesday, March 17, 1915, at 12 o'clock, noon.

Clinics illustrating the work of the several departments of the hospital will be given as follows:

Dr. Louis M. Spear, "Cases of Chronic Medicine."

Dr. Edward P. Richardson, "Cases of Chronic Surgery."

Dr. Charles F. Painter, "Cases of Chronic Arthritis."

Lunch will be served at 1 p.m.

To reach the hospital:

Automobiles take Huntington Avenue to Calumet Street, Hillside Street, Parker Hill Avenue, to top of Hill.

By electrics: Huntington Avenue through Brookline Village to Waite Street.

Lyman S. Hapgood, M.D., *Secretary*.
6 Garden Street, Cambridge, Mass.

American Association of Immunologists.—The annual meeting will be held at Washington, D. C., May 10, 1915.

Martin J. Synnott, M.D., *Secretary*,
Montclair, N. J.
Gerald B. Webb, M.D., *President*,
Colorado Springs, Colo.

American Posture League.—The second annual luncheon of the American Posture League will take place at the Hotel Astor, New York, on Saturday, March 13, at 1.30 p.m. The Central Committee on Public Health Organizations, which meets in New York on the same date, has been invited to attend the luncheon. Several of its members are officers or directors in the Posture League.

The after-luncheon program will set forth the educational, scientific and welfare aspects of the work of the organization. The President and founder of the League, Miss Jessie H. Bancroft, will preside and will speak on the history, plan and work of the American Posture League; other speakers will include Dr. Frederick R. Greene, of Chicago, first vice-president of the American Posture League, and secretary of the Council on Health and Public Instruction of the American Medical Association; Dr. Joel E. Goldthwait, second vice-president, and Dr. E. G. Brackett, both of Boston; Dr. Eliza M. Mosher, Dr. Henry Ling Taylor, secretary, and Dr. S. Josephine Baker, of New York. Dr. Percy W. Roberts will present an important report of original research conducted by the League; Dr. Anna L. Brown will tell of the National contest on Posture being conducted by the Young Women's Christian Association, and Mr. Harry O. Bullock will speak for the Brooklyn Rapid Transit Company, relative to the seats in the new subway cars, which the Posture League designed in coöperation with the construction engineers of the company.

The annual meeting for the election of directors and officers will occur earlier in the day.

H. L. Taylor, M.D., *Secretary*.

RECENT DEATHS.

Dr. James F. Donnelly, who died on February 25 at Nish, Serbia, was a graduate of the University of Louisville and a practitioner in New York City. He went to Serbia in November, 1914, with an American Red Cross unit. The cause of his death was typhus.

Dr. O. K. Sprengel, surgeon-in-chief of the public hospital at Braunschweig, Germany, and president of the German Surgical Association died recently of septic infection at the age of 62.

Dr. James Peckham Campbell, who died on Feb. 27 in New York City, was born in Lewes, England, on August 18, 1833. Migrating early to the United States he became a student at Syracuse University, of which at his death, he was the oldest living graduate. After studying medicine he was for a time a surgeon of the Cunard steamship line and later settled in the practice of his profession at Norfolk, Va., and in New York City. He is survived by three daughters and three sons.

Dr. Luther Graves Townsend, a retired Fellow of The Massachusetts Medical Society, died at his home in Townsend, Mass., March 1, aged 70 years. He was born in Nashua, N. H., Dec. 12, 1844, and was graduated from the Harvard Medical School in 1871, serving as house physician at the Boston Lunatic Hospital and at Deer Island after graduation. He practised at Townsend the rest of his life and was a member of the school board of that town from 1880 to 1900.

IMPORTANT ANNOUNCEMENT

LIQUID ALBOLENE

We regret to say that supplies of Russian oil, from which LIQUID ALBOLENE is refined, are no longer obtainable, owing to the European war.

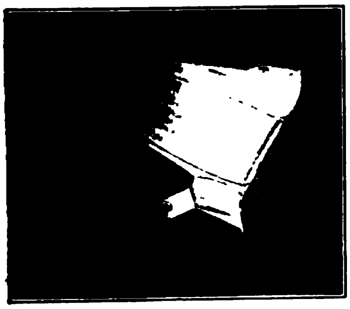
As soon as present stocks are exhausted LIQUID ALBOLENE will be out of the market.

To avoid inconvenience to physicians we have prepared an "American Liquid Petrolatum," which we are offering as a temporary product to take the place of LIQUID ALBOLENE until such time as we are again able to secure supplies of Russian oil.

American Liquid Petrolatum is of different chemical composition from LIQUID ALBOLENE, is of slightly less gravity and viscosity, and is less resistant to mineral acids. Limited supplies only are being refined, and we urge physicians to be careful to specify LIQUID PETROLATUM, AMERICAN, McK. & R., in order to secure the best preparation to be had during the war, or until LIQUID ALBOLENE is again procurable.

Two Varieties—PLAIN and AROMATIC

McKESSON & ROBBINS, 91-97 Fulton St., NEW YORK



THE STORM BINDER AND ABDOMINAL SUPPORTER

(PATENTED)

Adapted to use of Men, Women Children and Babies

Modifications for Hernia, Relaxed Sacro-iliac Articulations, Floatting Kidney, High and Low Operations, Ptosis, Obesity, Pregnancy, Pertussis, etc.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours

KATHERINE L. STORM, M.D., 1541 Diamond Street, Philadelphia

Bind Your Journals to Preserve Your Journals

It only costs you $1.25 a volume if you send them to

The Boston Medical and Surgical Journal

126 Massachusetts Avenue :-: :-: Boston, Mass.

INDEX TO ADVERTISEMENTS

American Engraving Co. xviii
Anheuser-Busch vii
Armour & Co. xx
Boston Hygienic Corset Co. ii
Boston Laboratories...................... xiv
Fisk & Arnold ....Artificial Limbs ix
French Lick Springs............Pluto Water iv
Harvard Dental School.................... xiv
Harvard Medical School................... xiv
Hoffmann-La Roche........................ xiii
Hood's Milk xii
H. O. Oatmeal vi
Hotel San Remo viii
International Instrument Co. ix
Jefferson Medical College.........Philadelphia xiv
Journals, Bound xix
King's Puremalt v
Mahady, E. F. Co. ii
Massachusetts General Hospital xv
McKesson & Robbins xix
Medical School of Maine.................. xv
Medico-Chirurgical College............... xiv
Motor Car Service Co. xviii
Mulford, H. K. Co. xi
New York Eye and Ear Infirmary........... xv
New York Polyclinic Medical School....... xiv
New York University...................... xv
Nurses' Directory viii
Parke, Davis & Co. xiii
Pomeroy xx
Professional Cards..................xvi and xvii
Quaker Oats Co. ix
Royal Baking Powder Co. iii
Saunders, W. B. Co.................Publishers i
Sharp & Dohme ....Chemists v
Sherman's Bacterins iv
Squibb & Sons xviii
Storm Binder xix
Syracuse University...................... xiv
Tufts College Medical School............. xv
Warren Chambers.......................... xviii

Armour's
LABORATORY
Products

Fresh raw material makes the most reliable goods

Armour's
Thyroids—
powder and tablets
Parathyroids—
powder and tablets
Anterior Pituitary—
powder and tablets
Posterior Pituitary—
powder and tablets
Lecithol
Extract of Red Bone Marrow
Elixir of Enzymes
Peptonizing Tablets
Peptonizing Powder
Pituitary Liquid—
standardized and dated

Corpus Luteum *(Armour)*

GUARANTEED from true substance. In amenorrhea, dysmenorrhea, artificial menopause, reflexes of nervous or congestive origin, psychoses, neurasthenic symptoms during menstrual life, sterility, impairment of ovarian function, repeated abortions, hyperemesis of early pregnancy.

In powder, 5-grain capsules and 2-grain tablets.

ARMOUR AND COMPANY Chicago

POMEROY
FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY
41 WEST STREET, BOSTON

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

HARVARD COLLEGE LIBRARY
CAMBRIDGE, MASS.

THE BOSTON Medical and Surgical JOURNAL

THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

VOL. CLXXII
No. 11

THURSDAY, MARCH 18, 1915.

Single Copies 15 Cents
Five Dollars per Annum

CONTENTS

ORIGINAL ARTICLES

PROGRESSIVE NEURO-MUSCULAR ATROPHY. *By Floyd F. Hatch*, Boston.
ON THE VALUE OF THE GOLD SOL TEST (LANGE) IN CEREBROSPINAL FLUID OBTAINED POST MORTEM. *By H. C. Solomon, M.D., and E. S. Welles*, Boston.
ENCHONDROMA. *By Louis A. O. Goddu, M.D.*, Boston.
A STUDY OF DISTURBANCES OF THE STOMACH. (Concluded.) *By H. F. Hewes, M.D.*, Boston.
A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. (Cont.) *By Torr W. Harmer, M.D.*, Boston.

EDITORIALS

HARMONIZATION OF STATE AND FEDERAL NARCOTIC LAWS.
FAMILIAL DISEASES.
THE HARVARD EXPEDITIONARY UNIT.
SUBSCRIPTION DINNER TO DR. THEOBALD SMITH.

For complete table of contents, see first text page.

THREE PRINTINGS IN FOUR MONTHS

Crile and Lower's Anoci-Association

Anoci-association is the new method of anesthetizing. It *prevents shock*, robs surgery of its harshness, diminishes postoperative mortality, lessens the likelihood of nausea, vomiting, gas-pains, backache, nephritis, pneumonia, and other postoperative complications. This new book tells you precisely how to anesthetize the operative area with novocain or some other local anesthetic *before* the general anesthetic is given, thus *blocking the nerve impulses* and so protecting the cells of the brain, suprarenals and liver, traumatic or psychic exhaustion of which constitutes "shock." You get first a monograph on shock. Then follow chapters on the *principles* of anoci-association; the technic of *its application* in the various operations; *anoci-association* and *blood-pressure*, and *the technic of nitrous-oxid-oxygen anesthesia.*

Joseph C. Bloodgood, M.D., *Johns Hopkins University*
"I am convinced that any operation performed under this method of anesthesia [Anoci-association] will result in less shock; the mortality will be lower; the postoperative discomforts and complications will be greatly reduced; the period of disability very much shortened. All this has certainly been accomplished *in my own experience.*"

Octavo of 259 pages, illustrated. By GEORGE W. CRILE, M.D., Professor of Surgery, and WILLIAM E. LOWER, M.D., Associate Professor of Genito-Urinary Surgery, Western Reserve University. Cloth, $3.00 net.

Crile on Emotions — *JUST OUT*

The papers in this volume give you the steps by which Dr. Crile has established his Kinetic Theory of shock. The first papers show the phylogenetic origin of the emotions and the pathologic identity of traumatic and emotional shock, while the later papers point out most convincingly not only the *clinical application* of these premises, but also their broad general significance in every phase of life.

Octavo of 240 pages, illustrated. By GEORGE W. CRILE, M.D. Cloth, $3.00 net.

W. B. SAUNDERS COMPANY — West Washington Square, Philadelphia

Entered at the Post-office at Boston as second-class matter

FRONT-LACED CORSETS

The only method by which adequate abdominal support can be obtained.

THE BOSTON HYGIENIC CORSET COMPANY
59 TEMPLE PLACE, 'Phone Oxford 4131

E. F. M.
Liquid Paraffin

Is so pure that aromatics are not required to cover up the disagreeable odor or taste which is found in most of the so-called Paraffin Oils on the market.

Our Russian Oil maintains a perfect control of the bowels without irritation, its action being purely mechanical without purgative principles.

It is extremely useful in surgical and obstetrical practice.

We are the sole importers of the genuine Lane Oil.

Samples free to Hospitals and Physicians.
Write for Prices.

E. F. MAHADY CO.
Surgical and Hospital Supplies
673 Boylston Street, Boston, Mass.

Current Literature Department

ABSTRACTORS.

Laurence D. Chapin, M.D.
Reginald Fitz, M.D.
C. Frothingham, Jr., M.D.
Torr W. Harmer, M.D.
J. B. Hawes, 2d, M.D.
Foster S. Kellogg, M.D.
Roger I. Lee, M.D.
Geo. A. Leland, Jr., M.D.
Francis W. Palfrey, M.D.
Edward H. Risley, M.D.
George G. Smith, M.D.
Lesley H. Spooner, M.D.
Wilder Tileston, M.D.
Edw. L. Young, Jr., M.D.

MEDICINE.

The Diagnosis and Treatment of Parenchymatous Syphilis.

Mott (*Brit. Med. Jour.*, Jan. 30, 1915), in a long article with an excellent bibliography, discusses the question of parenchymatous syphilis. He first describes the discovery of the spirochaetes in the brain and describes the methods of distinguishing and identifying these organisms. He discusses the experimental observations which he, as well as others, has made on the subject of syphilis of the central nervous system and the evidence in favor of the view that there is a biological change in the spirochaete of primary syphilis as compared with that found in general paralysis and tabes. He believes that these latter may have been attenuated in their virulence by the widespread use of mercury; or again, that it may not be the spirochaetes that have changed, but the fluids and tissues of the body.

He discusses the microscopic changes in the cortex in relation to the spirochaetal colonization, and presents some excellent microphotographs. He describes experiments on animals in relation to the therapeutic action of mercury and arsenic compounds. He gives his figures as to the value of the Wassermann reaction in cases of general paralysis, and finds that it is a positive one in such cases up to 98.4 per cent. In treatment, he does not believe that any measure of success has attended any of the methods of treatment so far employed for general paralysis. [J. B. H.]

Exophthalmic Goitre.

Williams (*Practitioner*, Jan., 1915) takes up the subject of exophthalmic goitre. He is evidently strongly opposed to operative measures, and in his experience has had very little success with this method of treatment. He believes that it would be as reasonable, as scientific, and as effectual, to remove one kidney for glycosuria, as it is to ablate one lobe of the thyroid gland for Graves's disease. He comes to the conclusion that we have as yet no logical or reasonable treatment of this condition. [J. B. H.]

Thyroid Insufficiency.

Hertoghe (*Practitioner*, Jan., 1915), in an article with many excellent illustrative plates, takes up the subject of thyroid insufficiency. He takes up the general subjects of cretinism and myxedema. He discusses in considerable detail the physiology of the thyroid gland in these conditions, and the effects of the administration of thyroid extract. He reports many illustrative cases.

He goes into considerable detail in discussing the effects on the muscular tissue, on the nervous tissue, on bones, cartilage, glands, epidermic and epithelial tissues, the cardio-respiratory system, gastro-intestinal system, the urinary system, and sexual organs, in these conditions; and devotes considerable space to etiology, and very briefly discusses symptomatology and treatment. Of chief interest, in this article, are the excellent photographs and plates, and the description of the same. [J. B. H.]

(Continued on page iv.)

HARVARD COLLEGE LIBRARY
MAR 18 1915

The Boston Medical and Surgical Journal

Table of Contents

March 18, 1915

ORIGINAL ARTICLES.

PROGRESSIVE NEURO-MUSCULAR ATROPHY (PERONEAL TYPE OF CHARCOT, MARIE AND TOOTH): WITH REPORT OF THREE CASES IN A FAMILY WITHOUT HEREDITY. *By Floyd F. Hatch*, Boston.... 393

ON THE VALUE OF THE GOLD SOL TEST (LANGE) IN CEREBROSPINAL FLUID OBTAINED POST-MORTEM. *By H. C. Solomon, M.D.*, Boston, and *E. S. Welles*, Boston.... 398

ENCHONDROMA. A REVIEW OF THE LITERATURE OF THE SUBJECT WITH REPORT OF THREE CASES OPERATED UPON BY THE AUTHOR. *By Louis A. O. Goddu, M.D.*, Boston.... 402

A STUDY OF DISTURBANCES OF THE STOMACH. *By H. F. Hewes, M.D.*, Boston. (Concluded.).... 406

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA.. A CRITICAL ANALYSIS OF 134 MICROSCOPICALLY-PROVEN CASES. *By Torr Wagner Harmer, M.D.*, Boston. (Continued.).... 411

BOOK REVIEWS.

Guiding Principles in Surgical Practice. By Frederick-Emil Neef, M.D.... 416
Operative Surgery. By Edward H. Taylor, M.D.... 416

EDITORIALS.

HARMONIZATION OF STATE AND FEDERAL NARCOTIC LAWS.... 417
FAMILIAL DISEASES.... 419
THE HARVARD EXPEDITIONARY UNIT.... 419
COMPLIMENTARY DINNER TO DR. THEOBALD SMITH.... 420
MEDICAL NOTES.... 420

OBITUARY.

SAMUEL WOOD LANGMAID, M.D.... 422

CORRESPONDENCE.

AN OLDEN-TIME NUTRITION LABORATORY. *Wm. Pearce Coues, M.D.*.... 427
QUESTIONS ABOUT THE HARRISON LAW. *J. H. Averill, M.D.*.... 427

MISCELLANY.

MEDICAL EXTRACTS FROM SEVENTEENTH CENTURY LETTERS.... 423
THE FUNCTION OF THE CORPUS STRIATUM.... 424
INVESTIGATION OF POLIOMYELITIS IN VERMONT.... 425
MEMORIAL OF DR. HENRY CUTLER BALDWIN.... 426
BELGIAN PHYSICIANS' RELIEF FUND.... 427
NOTICES, APPOINTMENTS, RESIGNATIONS, RECENT DEATHS, BOOKS AND PAMPHLETS RECEIVED.... 428

Original Articles.

PROGRESSIVE NEURO-MUSCULAR ATROPHY, (PERONEAL TYPE OF CHARCOT, MARIE AND TOOTH): WITH REPORT OF THREE CASES IN A FAMILY WITHOUT HEREDITY.[*][†]

BY FLOYD F. HATCH, BOSTON.

[From the Medical Clinic of the Peter Bent Brigham Hospital, Boston, Mass.]

THE impulse given to the study of this type of muscular atrophy came in 1886 when Charcot and Marie[1], and Tooth[2] coincidently in the same year published papers reviewing the myopathies. Separately they established from clinical and pathological observations that the peroneal form, beginning usually in early childhood and involving the extremities only, depended upon neural as well as muscular degeneration and isolated it between the myopathic (muscular dystrophies) and the myelo-pathic (anterior poliomyelitis) affections.

The characteristics of the affection as originally described by Charcot and Marie are:

1. Progressive muscular atrophy beginning first in the feet and legs, not appearing in the hands and arms until several years later, the progression of the atrophy being slow. 2. Relative integrity of the muscles near the trunk, or at least much longer preservation of these than of the muscles of the distal ends of the limbs. 3. Integrity of muscles of the trunk, shoulders and face. 4. Fibrillary contractions in the atrophying muscles. 5. Vasomotor disturbances in the portions of the limbs which have atrophied. 6. Absence of pronounced contractions of the tendons. 7. Sensations usually intact but sometimes affected. 8. Reaction of degeneration in atrophying muscles. 9. Hereditary and familial tendencies.

The three cases reported here are members of a Jewish family which came to this country in 1899. The father, a well developed and nourished man, left his wife and children several years ago. Nothing is known of his family with the exception of one brother and his family, all of whom have always been well. The mother is living and well. There is no history of paralysis or other nervous disturbance in her family. The mother does not use alcohol. The father drank at times. There are three healthy sisters, aged 21, 13 and 8 years. All children were normal deliveries, healthy infants and walked before one year of age.

CASE 1. Plates I and II. Sam F., 24 years old, has always lived at home, never having been able to work.

Complaint: "Weakness of legs and arms."

Past History: Internal strabismus of the left eye was present at birth. He had measles at two years, chicken pox at three years and whooping cough at four years of age. Entropion of both lower lids began at 17 years with falling out of the lashes and chronic irritation since that time.

Present Illness: Began at the age of seven years when weakness was noted in his feet, making walking difficult. Weakness and atrophy increased until at the age of 14 years the muscles above the knees also seemed to be involved and he fell down constantly when walking about. At 16 years the patient was wholly unable to walk and moved about by crawling. At about this time the fingers of the left hand and almost immediately of the right became weak with

---

[*] Reported at a medical meeting at the Peter Bent Brigham Hospital, November 10, 1914.
[†] Received for publication Dec. 22, 1914.

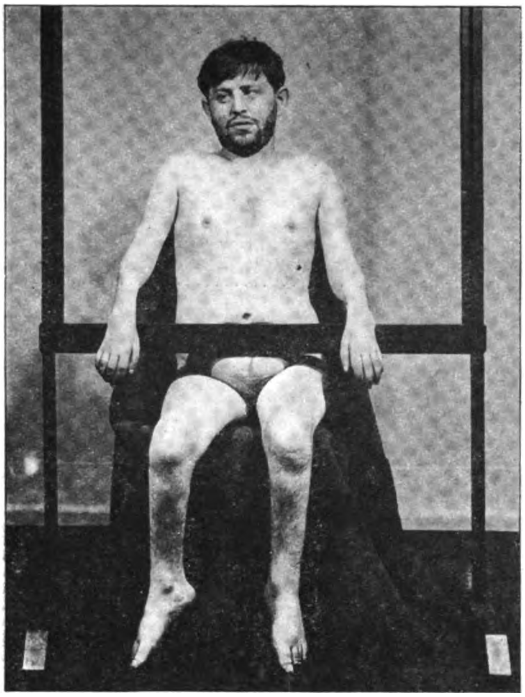


PLATE 1.

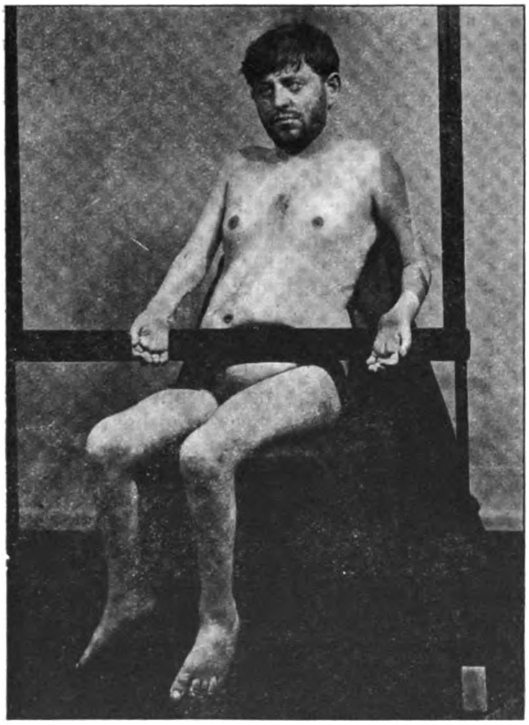


PLATE 2.

gradual development of contracture so that they could not be straightened. Subsequently the whole lower arm on both sides became involved so that at the age of 20 years he was unable to use either hand. At present there remains ability to move the third and fourth fingers of the right hand to a slight extent. No sensation of pain, cramp or discomfort has ever been felt. He sleeps well, has a good appetite and never becomes nervous or irritable. At the present time he clumsily washes and dresses himself, using his hands in a flail-like manner but can perform no complex movements. His mentality appears normal.

Physical Examination: Shows head and body, including the shoulders and buttocks, well developed and nourished. Skin and mucous membrances are normal. Eyes, show entropion of both lower lids with a low grade chronic conjunctivitis and a left internal strabismus. Pupils react equally to light. Tongue is clear and protrudes without tremor. Chest is well formed, expansion good. Lungs and heart are normal. Systolic blood pressure is 120 mm. of mercury. Abdomen is fat and somewhat protuberant, no masses or tender areas are made out. Patient sits or lies with both knees flexed at right angles to the thighs from contracture. There is evident equino-varus of both feet, most marked on the right, also a marked degree of external rotation of the whole lower right leg from atrophy and weakness of the vastus medialis. The legs are short as compared with the body, giving the patient a dwarfish appearance. Atrophy of all muscles of the legs below the middle third of the thigh is evident but to some extent obscured by the thick layer of subcutaneous fat. The hands and arms show a marked degree of atrophy and paralysis below the middle third of the upper arm, comparable with that of the feet and legs. The thenar and hypothenar eminences of both hands are absent. The hands are flattened with the terminal phalanges slightly flexed. The biceps on the right is capable of flexing the arm. The left biceps cannot accomplish this. There is practically no muscular movement below the elbows. On the left there seems to be slight weakness of the shoulder muscles. The hands and feet are about two-thirds normal size and length. The knee jerks, Achilles jerks, plantar, biceps and triceps reflexes of both sides are absent. There is no ankle clonus or Babinski sign. The cremasteric and abdominal reflexes are present.

While the patient was in the hospital fibrillary tremor at a rate of about 8 per second was noticed in his pectoral, biceps and triceps muscles, especially on the left, brought on by any attempt to move the arm. A tracing was made, by connecting the arm by electrodes with the electrocardiograph galvanometer (Plate III), and by means of an air-containing cuff around the arm connected with a recording tambour (Plate IV). These plates show graphically the electric disturbance set up by the fibrillary twitching of the muscle and the rate and degree of muscle contraction. The muscle sounds during the

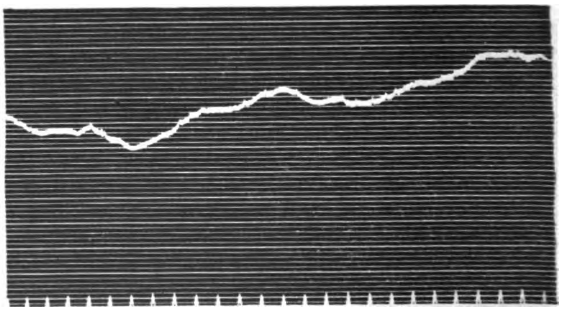


PLATE 3.

Tracings were obtained by placing the electrodes on the outer side of the left upper arm, one at the upper part and the other at the lower part of the triceps. There are fine movements of the string produced probably by muscular twitchings which result when patient tries to move his fingers.

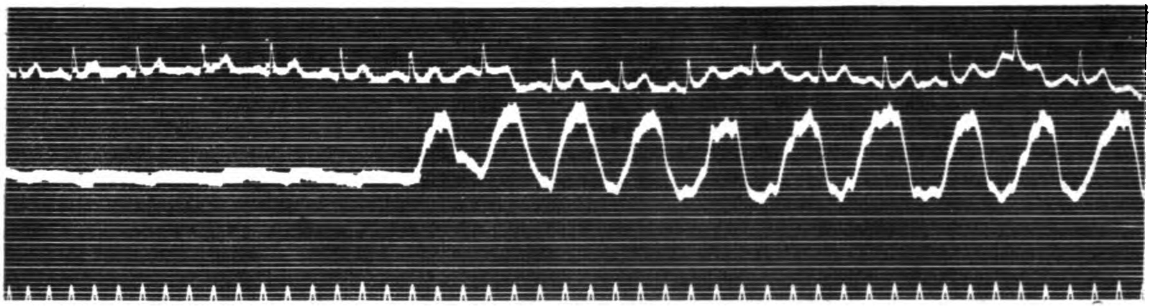


PLATE 4.

Upper curve is electrocardiogram showing normal cardiac complex. Middle curve is record obtained from a recording tambour connected with an air cuff around upper arm. First portion of the curve shows low waves produced by pulsation of brachial artery; second portion shows large and small waves produced by twitching of arm muscles. Lower curve is record of a time marker beating one-fifth seconds.

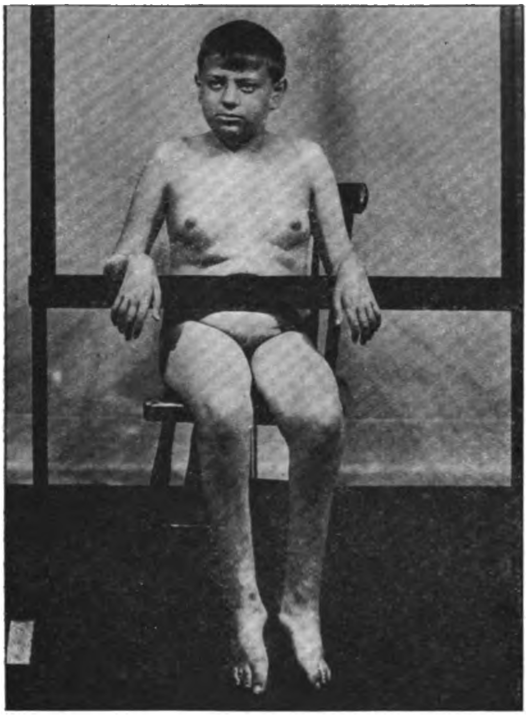


PLATE 5.

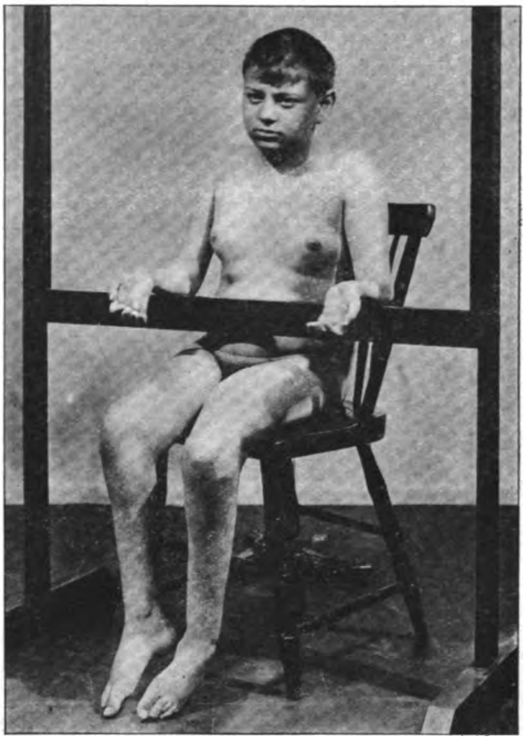


PLATE 6.

period of tremor could readily be heard with a stethoscope. There was a similar tremor noticed in the muscles of the upper left cheek and those of the lower left lid which probably originated in the orbicularis palpebrarum. The location of these muscles was not suitable to obtain graphic tracings.

CASE 2. Plates V and VI. Harry F., 12 years old.

Complaint: "Cannot walk."

Past History: No previous illness. Digestion good. Bowels regular.

Present Illness: Began at age of seven years when he noticed that the right foot became weak and easily tired when walking. The same difficulty was encountered in the left foot about four weeks later. The legs and feet have grown progressively weaker with marked atrophy of all muscles below the knees and six months ago he finally became unable to walk at all. About four years ago he noticed weakness followed by incoördination in his hands, appearing in the first and second fingers of the right hand. Atrophy and paralysis have progressed until at present there is no muscular control below the insertion of the biceps. His mentality appears normal.

Physical Examination: Shows a normal appearing boy of 12 years, well developed and nourished except in the musculature of the arms and legs. Pupils are equal and react to light. Tongue is protruded in the mid line without tremor. Skin and mucous membranes are normal. Chest is well formed, expansion good. Lungs and heart are normal. Systolic blood pressure is 120 mm. of mercury. Abdomen is fat and slightly protuberant, no masses or tender areas are made out. Upper extremities show a progressive tapering from the shoulders to the hands which are held in a position of pronation, flexed at the wrists. The lower arm muscles, interossei muscles, thenar and hypothenar eminences show marked atrophy. The biceps and triceps reflexes are absent. Movements of the lower arms and hands are accomplished by flinging movements of the shoulder muscles. The lower extremities show the same type of progressive tapering. The right knee is held in position of genu valgus Both feet show equino-varus which is especially marked on the left. The feet and hands are smaller than those of the average boy of his age and size. The atrophy of the lower legs and feet is even more obscured by the thick layer of subcutaneous fat than in the arms and hands. All muscle power below the knees is gone. The knee jerks and plantar reflexes are absent. There is no ankle clonus or Babinski sign. No muscular tremor was observed.

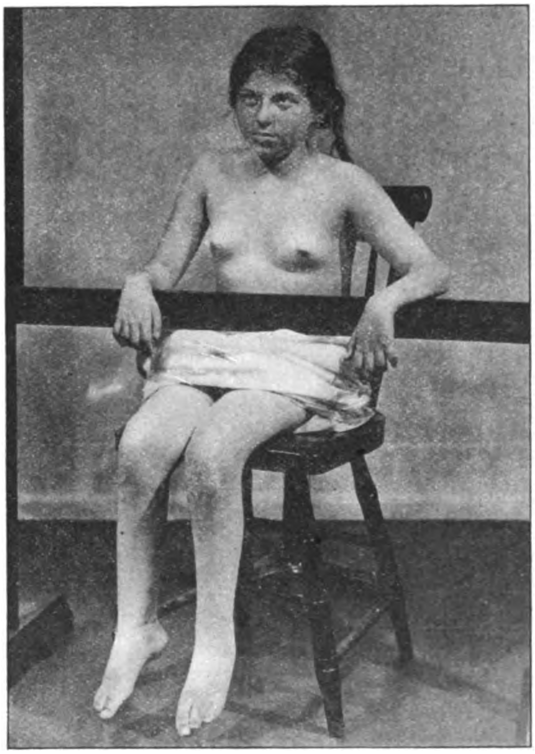


Plate 7.

Case 3. Plates VII and VIII. Mary F., 10 years old.

Complaint: "Unable to use hands or feet."

Past History: Measles at four years followed immediately by whooping cough which persisted for six months.

Present Illness: Began at age of four years about one or two months after the whooping cough, when mother noticed that the child walked peculiarly, picking up feet higher than usual and bringing them down "flail-like." The weakness in her legs gradually increased until she is now barely able to walk. The weakness was first noticed in her hands about two years ago, at which time she could perform any complicated task, but paralysis and atrophy gradually progressed until now she is practically helpless, being able only to feed and dress herself with difficulty. The weakness and atrophy remain localized to the lower portions of the extremities. Her mentality is normal.

Physical Examination: Patient is well developed and nourished except in the musculature of the lower arms and legs. Pupils are equal and react to light. Teeth are in poor condition. Tongue protrudes in the mid line without tremor. Skin and mucous membranes are normal. Chest is well formed, expansion good. Lungs and heart are normal. Systolic blood pressure is 115 mm. of mercury. Abdomen is soft and rounded, no masses or tender areas are made out. The upper extremities appear normal as far down as the elbows. Flexion at the elbows seems weak but not limited. The muscles of the lower arms and hands show marked atrophy; especially noticeable is the absence of the thenar and hypothenar eminences. There is some contracture of the second, third and fourth fingers of both hands in the two distal phalangeal joints, giving the picture of an early "claw hand." Reflexes of the biceps and triceps are transient. No reflexes are present in the lower arms. The lower extremities show marked atrophy and practically complete paralysis of the muscles below the knees. The degree of atrophy is masked by thick subcutaneous fat. Both feet show equino-varus, more marked on the right. Knee jerks, Achilles jerks, and plantar reflexes are absent. No ankle or Babinski sign.

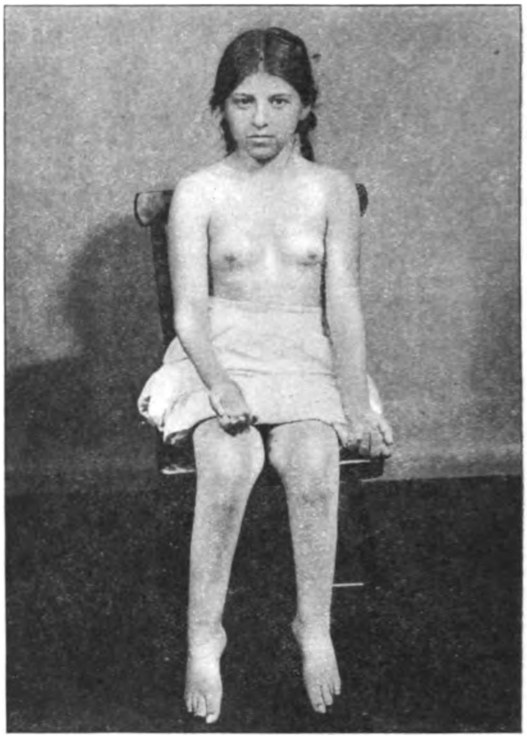


Plate 8.

The electrocardiograms in all three cases showed the heart mechanism to be perfectly regular and normal.

The special senses, smell, sight, hearing, taste and speech as well as the general sensations of pain, touch, position and temperature, were normal in all cases without exception. There is a well marked vaso-motor disturbance in the involved portions of the extremities in that their appearance is cyanotic and they feel cold as compared with the uninvolved portions.

Ophthalmoscopic examination showed normal fundi with the discs clearly outlined and vessels well seen throughout their course.

X-ray examination of the affected parts show evident bony atrophy, more or less failure of development of the sesamoid bones, shafts of long bones with small flaring extremities and some failure of the epiphyses to unite. In all three cases the sella turcica was small, antero-posterior diameter 10 mm., depth 6 mm.

The electrical reactions of the muscles in all three cases were very similar, varying directly with extent of the disease. The reaction of degeneration was found in muscles more recently involved (*i. e.* those about the knees and elbows). No reactions to electrical stimuli were obtained on muscles of the lower portions of the extremities in any case (*i. e.,* hands and feet). Partial reaction of degeneration was obtained in many muscle groups that appeared to be unimpaired. The muscles giving these partial reactions of degeneration were located above the atrophic muscles. This was most evident in the case of the elder boy where only very large amounts of faradic current (60-70 mil. amperes) gave muscle response in the deltoids and pectorals of the left side, while relatively small amounts of galvanic current (15-20 mil. amperes) gave similar response in normal individuals.

The clinical pathology of the urine and blood in all three cases showed normal conditions. The Wassermann reactions on the blood serum and spinal fluid in each case were negative. The spinal fluids, were, however, very interesting as shown by the following table. The coincident increase of albumin and globulin with the stage of the disease in the three cases seems a logical finding, as well as the pathological gold chloride reaction. I have not found these tests previously reported. The gold chloride reaction, as indicated by the number of the tube with the strength of reaction following, is one that simulates the cerebro-spinal syphilitic reactions, falling nearest to tabes.

SPINAL FLUID.

	Gold Chloride Reaction.							Globulin.	Albumin.	Cells per Cu. mm.
Tube	1	2	3	4	5	6	7			
Mary F.	±	+	+++	++++	+±	±	—	—	—	3
Harry F.	—	—	+±	+++	+±	±	—	±	+	2
Sam F.	—	—	++	++++	++	±	—	±	+±	2

The cases of this type, with atrophy confined strictly to the distal parts of the limbs, are recognized as a distinct type of neuro-muscular atrophy, with a distinct pathology. Cases of this kind with necropsy are very rare and we are obliged to depend on the findings of Marinesco[3], Sainton[4], and Dejerine and Armand-Delille[5].

The lesions of the cases studied by Sainton were: sclerosis of the posterior columns, especially the columns of Burdach, a slight degeneration of both pyramidal tracts, alterations of the columns of Clarke, atrophy of the cells of the anterior horns, slight degeneration of the intramuscular nerves, slight sclerosis of the nerves of the forearms and legs very distinct in the peroneal nerves, atrophy of the muscle fibres even causing complete disappearance of some fibres with proliferation of connective tissue. In this case the atrophy began in the upper limbs. The lesions resembled those observed by Marinesco in his case, except that Marinesco found the antero-lateral columns intact.

The lesions in the case reported by Dejerine and Armand-Delille were degeneration of some of the nerve cells of the anterior horns of the cervical and lumbar regions without diminution in their number, chronic meningitis, degeneration of the muscles of the hands and feet (*i. e.,* many nerve fibres of small size, many empty nerve sheaths and a few nerve fibres in the process of degeneration). The nerve trunks, the cutaneous sensory nerves and the anterior and posterior nerve roots with slight exception were normal.

Siemerlings'[6] case is held in question as belonging to this type, as there was great atrophy of the muscles of all the extremities, the upper limbs as well as the lower, and of the trunk. There was flaccid complete paralysis of the lower limbs so that all voluntary movements were lost. He found degeneration of the posterior and lateral columns, most intense in the lower thoracic and upper lumbar regions, degeneration of the peripheral nerves and muscles, atrophy of the cells of the anterior horns, of the columns of Clarke, of the anterior roots and of the spinal ganglia.

In the original description the type was so sharply defined that confusion with other types was supposed not to occur, but literature contains many reported cases in which some atypical features are present. Sachs[7] reported the first two cases from this country which deviated from the original type in that the infraspinati muscles were atrophied. Oppenheim and Cassirier[8] reported a case with involvement of the orbicularis palpebrarum. My first case is somewhat atypical in that the pectorals are weak and show the typical fibrillary contractions of early muscular atrophy and neural degeneration; otherwise the cases are absolutely typical clinical pictures of the original type descriptions and their classification cannot be questioned.

That the disease is a hereditary as well as a familial affection is well shown in the family reported by Dr. Herringham[9]. In his case, however, extending over three generations, males only were affected, though the disease was transmitted by females, following closely the hereditary features noticed in color blindness. In the family reported by Osler[10] thirteen individuals were affected in two generations, seven being males and six females. Both males and females transmitted the disease. This is by far the most common. Males are affected more frequently than the females in the proportion of two to one. (Some say five to one).

Concerning the prognosis it may be said to be good so far as life is concerned; the disease is of slow development and after reaching its height the patient may live for years without having additional symptoms. Thus in a typical case reported by Spiller[11], symptoms are said to have been present 45 years, and the patient's condition has not changed during the many years he has been under observation. There is no reason for expecting any tendency toward improvement.

REFERENCES.

[1] Charcot and Marie: Rev. de Med., Paris, 1886, vi, 97.

[2] Tooth: The Peroneal Type of Progressive Muscular Atrophy. Graduation Thesis, M.D. Cambridge, 1886.

[3] Marinesco: Archiv de Med. Exper., Paris, 1884, vi, 9.

[4] Sainton: Nouvelle Inconographie de la Salpetriere, 1899, xxii, 306.

[5] Dejerine and Armand-Delille: Review Neurol., Paris, 1908, xi, 1198.

[6] Siemerlings: Archiv für Psychiatrie, 1898, xxxi, 105.

[7] Sachs: Brain, 1890, xii, 447.

[8] Oppenheim and Cassirier: Deutsche Zeit. für Nervenheilkunde, xi, 148.

[9] Herringham: Brain, London, 1888, xi, 320.

[10] Osler: Arch. Med., N. Y., 1880, iv, 316.

[11] Spiller: Journal Nervous and Ment. Dis., 1907, xxxiv, 15.

ON THE VALUE OF THE GOLD SOL TEST (LANGE) IN CEREBROSPINAL FLUID OBTAINED POST-MORTEM.*

By H. C. Solomon, M.D., Boston,

Assistant in Neuropathology, Harvard Medical School; Junior Assistant Physician, Psychopathic Department, Boston State Hospital,

AND

E. S. Welles,

Interne, Psychopathic Department, Boston State Hospital.

In the examination of cerebrospinal fluid post-mortem the Wassermann reaction is unreliable according to the consensus of opinion. Nor is the post-mortem cell count of great value. There remains the Gold Sol Test of Lange, which, if reliable, with post-mortem fluids would offer much in the way of differential diagnosis of syphilitic and other conditions of the nervous system. At the same time it would give an excellent opportunity to compare the reaction obtained with the existing pathological condition.

(It may be stated here that the test is performed by the addition of a preparation of colloidal gold to ten dilutions of spinal fluid, ranging from 1/10 to 1/5120, and the results read according to the change in color ensuing. Where no change occurs the reaction is called negative and recorded as 0. The color changes, depending on the amount of gold precipitated, are recorded as 1, 2, 3, 4, 5, the latter being clear, due to all the gold being flaked out.)

In the clinical application of the gold sol test it has been shown that different inflammatory processes of the central nervous system give reactions differing in the amount of color change and in the dilutions in which the color change occurs depending on type of condition existing. Thus syphilitic disease of the central nervous system characteristically gives a reaction in the first five dilutions, tuberculous meningitis, as a rule, tends to react in the middle dilutions, while the meningitides of pyogenic origin often show the reactions in the high dilutions. Further, general paresis usually gives a characteristic reaction differing from that of cerebrospinal syphilis or tabes. The table on opposite page illustrates typical reactions.

In summing up the experiences with this test in the laboratory of the Psychopathic Hospital (previous contribution)[1] the following conclusions were offered: "(1) Paresis gives very typical reactions, but cases of undoubted paresis may give atypical reactions and cases not paresis may give the type reaction. (2) We are unable

---

* Being Contributions of the State Board of Insanity, Number 39 (1915.5). This communication was presented at a meeting of the Boston Society of Medical Sciences, January, 1915. This work was made possible through the courtesy of the Pathological Service of the Massachusetts State Board of Insanity, to whom our sincere thanks are given. (*Bibliographic Note.*—The previous contribution was Number 38 (1915.4), by E. E. Southard, entitled, "A Comparison of the Mental Symptoms Found in Cases of General Paresis With and Without Coarse Brain Atrophy," accepted for publication in the *Journal of Nervous and Mental Disease.*)

	1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120
General paresis.	5	5	5	5	5	5	4	3	1	0
Cerebrospinal syphilis.	0	1	3	3	1	0	0	0	0	0
Tuberculous meningitis.	0	0	0	0	1	2	3	3	2	0

to offer any conclusions as to its value in the differentiation of cerebrospinal syphilis and paresis. (3) Tabes gives a reaction quite different from paresis, fairly characteristic of syphilis but not in itself diagnostic of tabes. (4) It is of no certain value in cases of congenital syphilis showing no other signs of central nervous system involvement. (5) Non-syphilitic cases give at times reactions in the so-called syphilitic zone (the first five dilutions). (1) In view of the above statement it can be maintained that a reaction in the syphilitic zone in cases of syphilitics does not necessarily argue syphilitic involvement of the central nervous system, all other signs being negative. (7) It would seem to offer a differentiation of tuberculous meningitis and is here at times more valuable than any other test."

These conclusions drawn from a series of 135 cases, as those by others who have reported their results, have depended in large measure on the accuracy of clinical diagnosis. It is evident that in any empirical test such as the gold sol, the final evaluation must depend on post-mortem confirmation.

In order to determine the significance of its results of this test with post-mortem fluids we tested the spinal fluids obtained post-mortem from the lumbar region in a series of twenty-six cases. These results we have analysed, comparing them with ante-mortem results and interpretations as indicated in the above summary. For analysis the cases of this series may be divided into five groups:

Group 1. In which the gold sol test was performed, both ante- and post-mortem.

Group 2. Cases of general paresis.

Group 3. Cases giving a negative reaction.

Group 4. A case other than general paresis giving the typical "paretic reaction."

Group 5. The remaining cases giving positive reactions of various sorts.

Group 1. *Six cases tested both ante and post mortem.* S. B. I. 1914. 58, 66, 71, 74, 79, and S. B. I. 1915.2.

		1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120
S. B. I., 1914, 58. General paresis.	Ante-mortem.	5	5	5	5	5	5	4+	4	3	1
	Post-mortem.	5	5	5	5	5	5	5	5	4	3
S. B. I., 1914, 66. Multiple sclerosis.	Ante-mortem.	0	0	0	0	0	0	0	0	0	0
	Post-mortem.	0	0	0	0	0	0	0	0	0	0
S. B. I., 1914, 71. Cerebrospinal syphilis.	Ante-mortem.	1	1	1	0	0	0	0	0	0	0
	Post-mortem.	0	0	0	±	1	1	±	0	0	0
S. B. I., 1914, 74.	Ante-mortem. November 7, 1914.	±	2	3	3	3	4+	2+	1+	0	0
Glioma.	Ante-mortem. November 28, 1914.	1	1	4	3	3	3	2	1	0	0
	Post-mortem.	2	3	4	5	5	5	5	5	4	3
S. B. I., 1914, 79. General paresis.	Ante-mortem.	4	4	3	3	2	0	0	0	0	0
	Post-mortem.	1+	2	2	3	2	1	±	0	0	0
S. B. I., 1915, 2. Korsakow.	Ante-mortem.	±	±	2	2	2	±	0	0	0	0
	Post-mortem.	0	0	0	±	1	2	1	0	0	0

Of these six cases, the first two, representing general paresis and multiple sclerosis respectively, showed the same result with the gold sol test, ante- and post-mortem. The third, a case of cerebrospinal syphilis (post-mortem diagnosis) gives a very slight reaction in different dilutions before and after death. Such a light reaction is practically negligible from the clinical standpoint. The symptoms in this case were only of a few weeks' duration and the patient died in a convulsion; that is, we may consider a rapid change to have taken place in the central nervous system. This case is especially noteworthy in showing the value of the gold sol test in the differentiation of paresis and cerebrospinal syphilis. There were marked mental symptoms resembling catatonic dementia precox. The Wassermann reaction in serum and fluid was positive; there were 109 cells per cubic mm. in the spinal fluid; the pupils were sluggish. In other words the picture clinically and serologically was that of general paresis. The gold sol test on the contrary was very different from the typical paretic reaction. Post-mortem examination showed the case to be cerebrospinal syphilis (Alzheimer criteria). This is the only case we know of in which the diagnosis of cerebrospinal syphilis has been confirmed post-mortem and in which a gold sol test has been performed.

The fourth case, in which there was a large infiltrating glioma of the brain, gives quite different results before and after death; but in this instance fluids withdrawn before death with an interval of three weeks also gave very different reactions. This change in reaction is occasionally seen in fluids drawn at intervals before death and has seemed to us to indicate that an active process is going on. So we are not surprised to find such a difference from a previous ante-mortem result occurring in a fluid obtained after death when there has been a period of time intervening.

The fifth case is one shown histopathologically to be general paresis; yet ante-mortem the gold sol test had not been typical (the color change of less than the usual intensity). The post-mortem gold sol result appears quite different from the ante-mortem or the paretic reaction, and resembles rather the reaction described as suggestive of cerebrospinal syphilis. As one watches the development of color changes in paretic fluids, it will be found, as a rule, that the color changes start in the fourth or fifth tubes; after an interval of a half-hour to an hour one will often find the reaction such as here given post-mortem, in this case at the end of the observation; while later at the time the test is read, *i.e.* at the end of twelve hours, the changes have gone on to characteristic paretic reactions. In other words such a reaction as here observed would correspond to an incomplete paretic reaction. The case in question was a rapidly fatal one, with the entire duration of symptoms less than three months; in other words a rapidly progressing process with very probably corresponding changes in the fluid.

The last case is one in which the diagnosis was Korsakow's polyneuritic psychosis. Myerson[2] has offered evidence to show that in this condition there is a change in the albumin content of the spinal fluid from the normal, and that the amount at least of the albumin varies during the progress of the disease.

It seems to us that these cases indicate that fluids obtained after death have undergone no change as far as their reactions with the colloidal gold are concerned, from their conditions immediately ante mortem.

Group 2. *Seven cases of general paresis.* S. B. I. 1914. 58, 75, 87, 88, 79, S. B. I. 1915.1 and B. S. H. 1914.31.

	1/10	1/20	1/40	1/80	1/160	1/820	1/640	1/1280	1/2560	1/5120
S. B. I., 1914, 58.	5	5	5	5	5	5	4+	4	3	1
S. B. I., 1914, 75.	5	5	5	5	5	5	3	0	0	0
S. B. I., 1914, 87.	5	5	5	5	5	4+	4	4	3	2
S. B. I., 1915, 1.	5	5	5	5	5	5	5	5	5	4
B. S. H., 1914, 31.	0	0	0	0	0	0	1	1	1	0
S. B. I., 1914, 88.	3	2+	2	2	2+	4	1	0	0	0
S. B. I., 1914, 79.	1	2	2	3	2	1	0	0	0	0

Of these seven cases of general paresis the first four give typical "paretic reactions," while the remaining three give reactions which are not typical. Analysis of these three cases throws some light on the possible reasons for the deviation from the rule. The brain and various viscera from B. S. H. 1914.31 showed marked autolytic changes. Histologically there was a slight cerebral meningitis, the vessels were distended, particularly those in the cerebral white matter, and contained many polar staining bacilli. These were probably post-mortem invaders. There was some perivascular infiltration. This body was not kept under the best of conditions and was autopsied eight days post mortem. It seems probable that the autolysis led to the production of albuminous material not normally found. It suggests the problem of observing the changes in reaction of the fluid with the colloidal gold that may occur in autolytic and other lytic changes of the nervous system.

The second giving atypical results for paresis. S. B. I. 1914.88, was complicated with pulmonary gangrene. Whether this had any bearing on the results we are not prepared to say. S. B. I. 1914.79, as pointed out in the discussion under the preceding group, although an undoubted case of general paresis as confirmed histopathologically, failed to give a paretic gold sol reaction ante, as well as post mortem. This case tends to support the clinical observations as stated above, that cases of general paresis do not always give the type reaction.

This group shows that spinal fluids obtained post mortem from cases of general paresis give the same type of reaction with the gold sol as do ante-mortem spinal fluids, or in other words, that the gold sol test has the same diagnostic value as far as general paresis is concerned with spinal fluid obtained post mortem as it has with ante-mortem spinal fluid. As the gold sol test gives its most characteristic reaction and is of the most value for differential diagnosis in cases of general paresis this finding is of especial significance.

Group 3. *Five cases giving negative reactions.* S. B. I. 1914. 51, 64, 66, 73, and 80.

The diagnoses in these cases were epilepsy, dementia precox, multiple sclerosis, arteriosclerotic dementia and unclassified insanity. These are all non-inflammatory, non-exudative conditions, in which one expects and finds as a rule a negative reaction ante mortem. This group shows then that we may find the expected negative reaction post mortem.

Group 4. *One case,* S. B. I. 1914.53, which though *not general paresis gives the typical "paretic reaction."* Clinically this case was not considered syphilitic, although unfortunately no Wassermann reaction was performed. Histologically it showed a chronic meningo-encephalitis with slight infiltration of the vessel walls. The sections examined did not show the plasma cell reaction that one has come to demand for the histopathological diagnosis of general paresis, nor were there the typical parenchymatous changes. Still we know that there are cases of paresis in which the typical histopathological findings are very strictly localized and many sections must be examined before the diagnosis is established.

Considering this case to be other than paresis, we believe that here is confirmation of conclusion 1 (above), that cases other than paresis may give a reaction with the gold sol, such as paresis gives characteristically. This case again accords with our clinical experience.

Group 5. *Twelve cases* in which there is *some reaction with the gold sol* while the *diagnosis* is of a *non-inflammatory condition.* B. S. H. 1914. 28, 32, 34, 35, S. B. I. 1914. 54, 68, 72, 76, 83, 84, 1915.4 and 5. (See table in next column.)

Four of these cases give rather strong reactions, but some conditions are found post mortem which might account for the reactions. The appended notes give some suggestion of this. The reaction in the remaining eight is very weak, such as one finds in cases of a similar nature ante mortem. In the experience of the Psychopathic Hospital, the report of which has been previously mentioned, it was found that more than 30% of these cases in which all the clinical evidence led one to expect a negative reaction, on the contrary gave reactions similar to those shown here. Further experience with several hundred more fluids has shown the same results. We conclude that the results obtained in this group are similar to those obtained ante mortem.

1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	Diagnosis.	
0	0	0	1	2	2	±	0	0	0	Pellagra	B. S. H., 1914, 32
3+	4+	4+	5	2	1	±	0	0	0	Alcoholic hallucinosis	B. S. H., 1914, 28
										Softening of peduncles. Chronic pachy- and lepto-meningitis. Tuberculosis.	
3	2	2	2	1	1	±	0	0	0	Paranoid condition	B. S. H., 1914, 34
										Focal pachymeningitis, subpial hemorrhage. Tuberculosis.	
3	4	4	4	3	2	2	2	1	1	Organic dementia arteriosclerotic	B. S. H., 1914, 35
										Autolytic changes evident.	
1	2	3	3	3	4	4	4	4	3	Manic-depressive insanity	S. B. I., 1914, 54
0	0	1	2	2	1	±	0	0	0	Idiot? Pellagra	S. B. I., 1914, 68
0	0	±	1	1	±	0	0	0	0	Organic dementia	S. B. I., 1914, 72
1	1	1	1	1+	1+	1+	2	2	3	Hydrocephalus. Tuberculous meningitis	S. B. I., 1914, 76
0	0	0	1	2	±	0	0	0	0	Epilepsy	S. B. I., 1914, 83
0	0	0	1+	1+	1	0	0	0	0	Manic depressive insanity	S. B. I., 1914, 84
0	0	0	±	1	0	0	0	0	0	Senile dementia	S. B. I., 1915, 4
0	0	0	±	1	2	1	0	0	0	Manic depressive insanity	S. B. I., 1915, 5

CONCLUSIONS.

1. Cases that are clinically fairly stationary give the same results ante and post mortem with the gold sol test.

2. Post-mortem spinal fluid from cases of general paresis will usually give the typical "paretic reaction," such as given by similar cases ante mortem.

3. Post-mortem spinal fluid from cases of a non-inflammatory nature may give the expected negative reaction; but

4. "Unexpected" positive reactions are obtained with certain post-mortem spinal fluids, as are found with certain ante-mortem fluids from similar types of cases.

5. The results obtained with post-mortem fluids tested by the gold sol test of Lange are comparable to those obtained with the ante-

mortem spinal fluid and when the body is well preserved or the fluid obtained early, the results are the same as would have been obtained just prior to death.

6. The gold sol test has the same value in the examination of cerebrospinal fluid obtained post mortem from the lumbar region as ante mortem, and the results may be similarly interpreted for diagnostic purposes.

REFERENCES.

[1] Solomon and Koefod: Experience with the Lange Colloidal Gold Test in 185 Cerebrospinal Fluids. Boston Med. and Surg. Jour., Vol. clxxi, No. 24, p. 286, Dec. 10, 1914.

[2] Myerson, A.: The Albumin Content of the Spinal Fluid in Relation to Disease Syndromes. Journal of Nervous and Mental Disease, Vol. 41, No. 3, p. 154, 1914.

ENCHONDROMA.

A Review of the Literature of this Subject with Report of Three Cases Operated Upon by the Author.

By Louis A. O. Goddu, M.D., Boston,

Assistant Orthopedic Surgeon, Out-Patient Department, Massachusetts General Hospital; Orthopedic Surgeon, Mt. Sinai Hospital, Boston; Consultant Orthopedic Surgeon, Woonsocket Hospital, Woonsocket, R I.

In a review of the literature of this subject one is struck with the great diversity of opinion, and theories as regards etiology. Also, the difficulties of diagnosis and the many opinions regarding the conservative and radical treatment and prognosis are confusing. Necessarily treatment depends to a great extent on a number of conditions, and particularly upon whether the surgeon is a conservative or a radical man. In the older works on this subject the great preponderance of opinion leans to the view that this is a strictly benign growth, and up to the present time only a few men consider it more or less malignant in character.

Some writers state that a preponderance of osseous tissue makes it benign and gives it the character of an osteoma or exostosis, while others claim the presence of osteoid tissue makes it a malignant type. As regards the etiology of these tumors Virchow, Ziegler, Stengel, and others feel that they spring from remnants or islands of cartilage left in abnormal situations as the result of imperfect fetal development, and especially at the epiphyseal portion of the bone. They feel that rickets is a predisposing factor to the condition.

The three cases about to be described by the author were near joints, and the greater number of the cases looked up all occurred near the joints or at the epiphysis of long bones. Therefore, from this review one would be warranted in feeling that from a clinical viewpoint, at least, this was the most plausible theory.

Whether or not the tumor arises from the periosteum is still a question. Then, again, whether the hard cortex sometimes found is really a part of the tumor or whether it is simply an over-stimulated periosteum is a question.

These tumors are rarely pure cartilage, and even the small ones often show deposits of lime salts, which are easily seen at the time of operation, and they usually show, also, marked disintegration. As to the question of trauma being a factor in causing these growths, one can believe that it might possibly be an exciting cause, as in Case 2, described in this article. Von Recklinghausen has attributed the disturbance in bone formation, which gives rise to such growths, to imperfect development of the blood vessels with faulty nutrition, as the result of an imperfect vascular supply. Koch believes that cysts, which occur from time to time in long bones, frequently arise in enchondromata. Bloodgood states single and multiple central enchondromata are very rare, but undoubted examples have been reported.

Patients with these conditions almost always complain of swelling, and of inconvenience in motion, and not of pain, unless there is direct impingement on a nerve. However, as in Case 1, a very small nodule might occur very near a nerve, causing considerable pain. To make a definite diagnosis of enchondroma clinically is not always a simple task. We know that tumors developing in a young patient, and situated near the epiphysis are most likely either enchondroma or sarcoma. Sarcoma will usually give more clinical symptoms of a malignant growth; symptoms which are well known and definite when present. These growths are also much more rapid in their growth than enchondromata, therefore it seems that the clinical course of the growth would be rather an important factor in diagnosis. Enchondroma is, without doubt, of a very slow and insidious growth, and only when it interferes mechanically, or is large enough to be observed as a distinct tumor, are patients conscious of it. The general health is not impaired and subjective symptoms are absent.

It would seem that with the x-ray we have a fairly accurate adjunct in diagnosis. Cases 1 and 2 were diagnosed by Dr. Walter Dodd as enchondromata, and subsequent pathological examination, after removal, proved them to be such.

Dr. E. W. H. Shenton, of Guy's Hospital, states in a report that the radiograph easily distinguishes the tumor. He feels that one very important point is the very regular outline that we observe in these conditions, as compared with the irregular and ragged way that ossification takes place in malignant conditions.

The line between a benign and malignant tumor is not always a sharp, well-defined one. It would seem that the two classes are not distinct, but rather differ in degree. An apparently benign tumor may show characteristics gradually changing to malignant.

The fact that distinct enchondromata do recur after operations is no indication that the diagnosis is wrong. It seems to the writer that the two factors may enter into this condition. One is, as Bloodgood states, "An incomplete removal of benign tissue, with the exception of angioma, is always followed by re-formation of a tumor from residue left behind, and the chance of malignant change in the residue is greater than in the undisturbed benign lesion." The other condition is that which might be called a recurrence, but which may be due to a very small nodule overlooked at the time of examination. The writer feels that this was the fact in Case 1, where a small overlooked nodule grew, rather than a recurrence of the tumor took place after primary removal. As can be seen by the x-ray, it is only by extreme rotation of the arm in this case, that this small nodule situated in the musculo-spiral groove could be made out.

Treatment. All surgeons, of course, will readily agree that a radical removal is indicated. What to do with a border-line case is, of course, difficult to decide, but it would seem, when practicable, the patient should always be given the benefit of a conservative operation. In estimating whether or not the conservative treatment gives the desired result, we must, of course, see the difficulty of drawing conclusions from the results of a large number of surgeons, of varied technic and training, in this particular branch of surgery. It must be conceded that the surgeon most used to bone work is best able to cope with this condition.

In operations on this condition, the gross pathology gives a picture in experienced hands that leaves little doubt usually as to its diagnosis.

All surgeons know that very often the clinical picture of a condition does not coincide with the pathological picture. For instance, all orthopedic surgeons know, that they find knee joints which at time of arthrotomy show clinically a tuberculous lesion, but pathologically they give no indication of such a condition. These knees are followed, and later they come to excision, leaving no doubt as to their being typical tubercular knees, both by their clinical course and condition at time of excision. The writer believes that more and more, orthopedic surgeons are depending for diagnosis, in many of the bone lesions, on what their clinical experience teaches them.

In consideration of the above, and as Bloodgood further states, "In bone lesions the mutilation of amputation is so great and chances of a cure of any doubtful lesion, should it prove malignant, are so slight that the most conservative operation should be done."

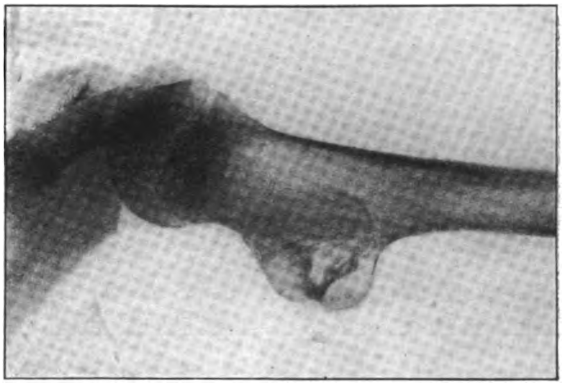
The writer feels that the conservative operation is indicated in the great majority of cases.

Virchow reports a case of enchondroma of the scapula, where the tumor was removed seven times, and the patient finally recovered. We must concede that the patient was far better off after seven conservative operations, still possessing his arm, than after the extensive radical operation of amputation. The author believes that the majority of surgeons are too quick to assume a recurrence of an operated tumor, as indicating malignancy. A simple recurrence in absence of other symptoms, as Virchow has shown, can do no particular harm, and conservative surgery is indicated. The loss of a limb means much to any individual, and the surgeon should be very judicious in his decision, in operating in these conditions. The majority of the cases when not too large, can easily be reached. The skin incision should be generous, and one will find that by very careful separation of the muscle fibres and rotation of the limb, the mass is readily reached without cross-cutting important structures.

Some authors have advanced the theory that these tumors start from the periosteum; the writer has a different opinion from some operators. A few surgeons state that the enveloping capsule can be opened and the enchondroma shelled out. The author cuts down when practicable, frees all the muscular attachments, does not open the capsule, cuts around the entire base of the growth, removing capsule and all. Some of these are very dense, and in order to be removed in toto, a sharp chisel and mallet are necessary. The base is then scraped with a very sharp bone curette and the whole cleaned thoroughly with 95% carbolic, followed by alcohol. The whole is covered as well as can be with fascia, then if the separation of the muscles has been done carefully, the fibres readily come together, and are held in place by chromic catgut and the skin closed with silkworm gut.

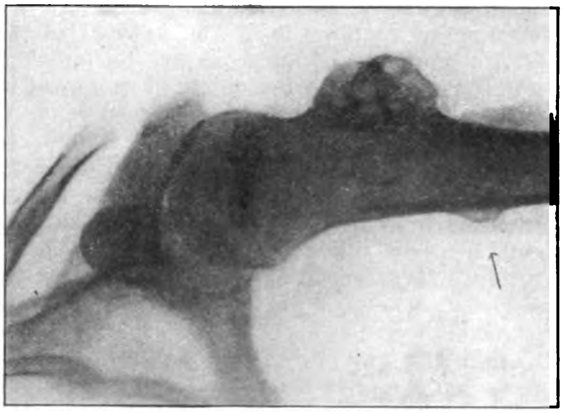
CASE 1. *Family History.* Negative. Age 11 years.

Past History. Child has always been well excepting tumor growth in the outer side of the right upper end of the humerus. Seen by the writer in consultation 20 months ago. Two years previous noticed a swelling of the right shoulder in about the middle of the deltoid muscle. Was seen by an eminent surgeon, who operated, and removed the growth; had been well for a period of 1½ years,



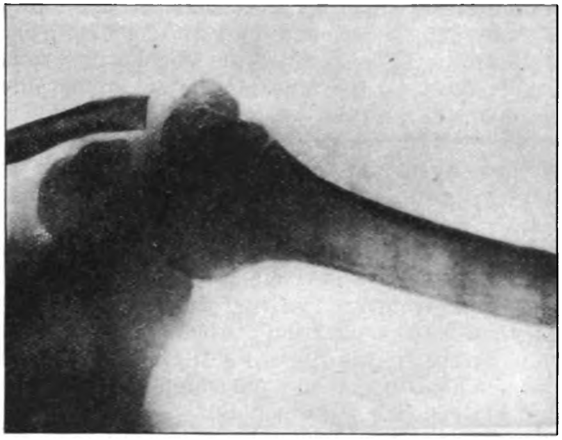
CASE 1.—PLATE 1.

Roentgen examination of right humerus. Plate reveals a tumor on the outer and posterior surface of humerus about one inch from the epiphyseal line. Roentgen diagnosis: Enchondroma.
Dr. Wm. Dodd.

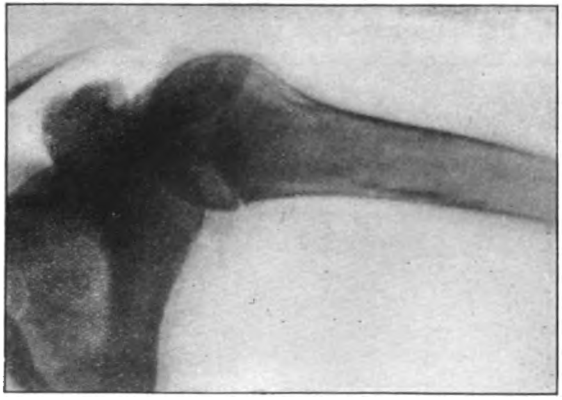


CASE 1.—PLATE 2.

Arm in marked rotation showing second lesion on inner aspect of humerus. This plate illustrates the importance of taking all such cases in various positions. Arrow points to small nodule.
Dr. Wm. Dodd



CASE 1.—PLATE 3.
Dr. Wm. Dodd.



CASE 1.—PLATE 4.

Same case taken by me twenty months after operation with arm in same relative position as two pictures of same case. It shows no pathological or abnormal condition. Dr. Wm. Dodd.

when the swelling was again noticed, and thought to be in about the same location.

Physical Examination. At time patient was seen by the writer a large rounded mass, about the size of a goose egg was felt at about the region of the centre of the deltoid muscle. Small nodule also felt in the course of the musculo-spiral nerve; incision about four inches long had been made in the external posterior aspect of the arm. Case had been seen at one of the large institutions and had been advised to have arm amputated at the shoulder. Patient then seen by the writer, who advised x-ray and conservative operation for removal of the tumor.

Operation. Incision six inches long, beginning at the tip of the shoulder, made in the skin, fascia cut and the fibres of the deltoid muscle, at its upper portion, separated down to the tumor mass. The arm having been rotated outwardly, the base of the tumor was cut into with chisel; the arm then rotated inwardly, forcibly, the under border of the tumor was cut into in a similar way. The tumor was removed and base curetted and only a thin shell of good bone left. In order to reach the smaller tumor on the musculo-spiral groove, the arm was forcibly rotated inward, a careful dissection made between the external head of the triceps and the outer border of the deltoid, down to the nerve. The nerve located, held away by blunt dissector, and the small tumor, on the edge of the groove, easily made out, carefully recovered by very sharp curette. The parts replaced and the arm outwardly rotated. The base of the large tumor was then carefully covered with fascia, muscle fibres brought together with catgut and the skin closed with silkworm gut.

Uneventful recovery in ten days.

Pathological Report. Tumor shows a fibrous capsule, beneath which is a thick layer of relatively acellular cartilage. The cells become more and more abundant as the bone is neared, until at the edge of the bone, they can be seen in many places arranged in rows at right angles to bone, with in places masses of acellular material between them, in places, small finger-like processes of vascular tissue, in places along the drawing edge between the new formed bone, trabeculae. The marrow has been replaced by delicate connective tissue. Along the edge of the bone the whole suggests enchondromal bone formation. Diagnosis, enchondroma.

Rontgen Report. Two plates taken. One in abduction internal rotation, and the other in abduction, external rotation. About two inches from the articular surface of the right humerus, and on the inner side and posterior aspect, there is seen a distinct tumor. The appearance of this tumor would lead one to believe that it was of cartilaginous origin, as there are marked areas of increased density and others where the density is much less. This is probably an enchondroma. There is no evidence of periosteal sarcoma and it does not look, in any way, like a giant cell sarcoma. Diagnosis, probably enchondroma. Dr. Walter Dodd.

One year and eight months after operation, physical examination shows no palpable enlargements in region of previous growths; no pain, no disability whatever, patient constantly putting on weight, physical condition excellent.

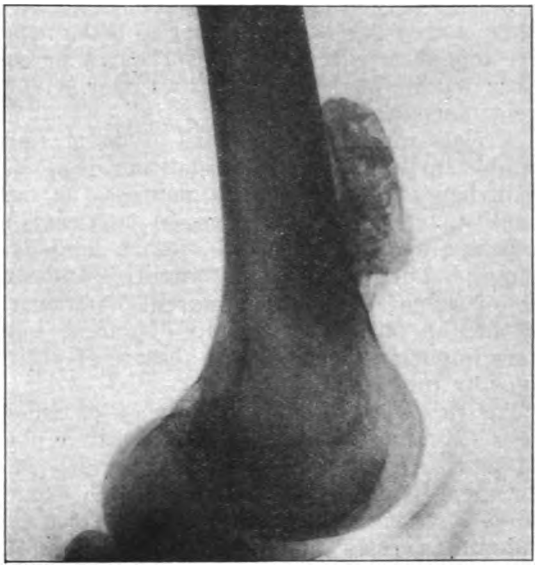
As can be seen in x-ray the humerus shows no sign of operation but looks like a perfectly normal humerus.

CASE 2. P. A. Age 24. F. H. Negative.

Past History. At age of 16 noticed a lump at the outer and lower end of the femur. Noticed three weeks after playing football; x-ray in 1906, one year after injury showed a small cartilaginous outgrowth about the size of a walnut. Operation advised but refused. Tumor gradually grew larger, pained only after sitting down awhile in a cramped position.

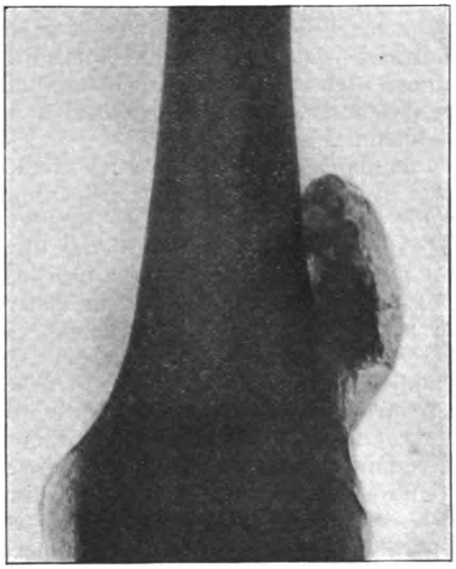
Physical Examination. Fairly well developed and nourished young man, a rather large, firm swelling felt about one inch external to the outer border of the patella; on motion of the lower leg definite snapping could be felt, no tenderness, operation advised.

Operation. Jan. 15, 1914. An incision about six inches long at antero-external aspect of the lower third of the thigh, and careful separation made down to the tumor mass. The tumor, as can be seen by x-ray, started from a small base, branched upward and outward. At the lower half of the tumor, the capsule of the knee joint seemed to be adherent; the tumor was therefore taken out in small sections by a Rongeur forceps and the capsule of the joint carefully pushed forward, as portions of the tumor were removed. This was done in order that capsule of knee joint should not be opened unnecessarily. The entire base carefully curetted, swabbed out with 95% carbolic, followed by alcohol and muscles stitched up.



Case 2.—Plate 1.

Internal lateral view shows a tumor somewhat anterior to the shaft. The character of the shadow indicates that it is made up of cartilaginous areas as well as areas of true bone. This plate shows the pedicle from which the tumor springs.
Dr. W. Dodd.



Case 2.—Plate 2.

Anterior view shows a tumor the base of which is one inch above the epiphyseal line, tumor is distinctly irregular and of irregular density. Roentgen diagnosis is enchondroma.
Dr. W. Dodd.

Discharged from the hospital in 10 days, wound healed. Weight bearing in three weeks, patient at present, twelve months after operation, states he never would have known he was operated upon, he feels so well, and all the former stiffness of the muscles that he had before operation had completely disappeared.

Pathological Report. Large, dense, bony and cartilaginous tissue from the femur measuring 4.5 x4x3 C. M. Section disclosed large masses of cartilage, in which occur, in places, groups of young, closely packed cartilage cells. Elsewhere the cartilage exhibits necrosis, the cells either absent or showing only shadows of nuclei. The connective tissue received with specimen shows in places a high grade hyaline disintegration, the process not suggesting metaplasia of connective tissue into cartilage. Among the fragments occur masses of necrotic cartilage which have undergone autolysis. Diagnosis, Enchondroma of the Femur.

X-Ray Report. Case II, Plate 1. Anterior view shows a tumor the base of which is one inch above epiphyseal line, tumor mass is distinctly irregular and of irregular density. This tumor shows the distinct bony pedicle from which it springs. Plate II, Internal Lateral view shows same tumor and is somewhat anterior to shaft. Character of the shadow indicates that it is made up of cartilaginous areas as well as areas of true bone. Diagnosis Enchondroma. Dr. Walter Dodd.

Case 3. Age 18.

Family History. Mother was in the Hospital five months ago for a goitre; father died of T.B. three years ago; history otherwise negative.

Present History. Has always been well.

Past Investigation. Five years ago, first noticed a lump on the inside of the arm, about the size of a marble. There was no pain at any time. The tumor grew steadily and upward, motion of the arm was limited more and more. The patient could not lift more than 50 pounds. On raising the arm there was no pain but there was a drawing sensation.

Physical Examination. Well developed and well nourished young man, rather apprehensive; no pain in motions of the arm; on palpation a tumor mass was readily felt in the axilla at upper end of the humerus.

Operation. An incision beginning at the tip of the coracoid process down along the inner border of the deltoid, to about the middle of the arm. A separation made between the two heads of the biceps, and dissection made down to the humerus; the whole arm rotated forcibly outward and the tumor readily presented itself. The tumor presented the usual smooth, shiny, cartilaginous appearance of these growths, was somewhat firmer than the usual enchondroma and readily removed. Contained areas of lime salts and necrosis. The tumor removed, base thoroughly curetted with 95% carbolic acid, followed by alcohol. The wound closed in the routine way. Patient discharged from the hospital in two weeks. At present, seven months from operation, has no inconvenience whatsoever. Pathological Diagnosis, Enchondroma.

REFERENCES.

[1] Tubby, A. H.: Deformities and Diseases of the Bones and Joints.
[2] Sutton, J. B.: Tumors, Innocent and Malignant.
[3] Andreas, F. W., M.D., F.R.C.P.: System of Medicine.
[4] Simmons, Channing C.: Tumors Originating in Bones, American Practice of Surgery, Vol. 3.
[5] Cathcart, Charles W.: Essential Similarity of Innocent and Malignant Tumors.
[6] Mungham, W. D.: New York Medical Journal, May 31, 1914.
[7] Richardson, W. G.: Enchondroma of the Manubrium Sterni, Bristol Medical Journal, May 10, 1913.
[8] Priamare, Alexander: Annals of Surgery, 1912.
[9] Dubreul' Arch. d'ant. men. Par. 1913-1914, xv, 53, 51.
[10] Bloodgood: Annals of Surgery, Philadelphia, 1913.
[11] Shattock, S. G., and Balleuse, C. A.: General Pathology of New Growths.
[12] Keene's Surgery, Vol. 1.
[13] Goldthwait, Painter and Osgood: Bone and Joint Diseases.
[14] Hamilton, John B.: Lectures on Tumors.
[15] Gowley, John W. S.: New York Medical Jour., Oct. 13, 1888.
[16] Duplay and Gazin: Les Tumeurs.
[17] Shenton, Edw. W. H.: Disease in Bones and Its Detection by X-ray, Guy's Hospital, 1911.
[18] Adami and McCrae: Text-book on Pathology.
[19] Additional references consulted but not referred to.
[20] Stengel: A Text-book of Pathology.
[21] Ziegler: General Pathology.

THE STUDY OF DISTURBANCES OF THE STOMACH.

By H. F. Hewes, M.D., Boston.

[From the Clinic of the Massachusetts General Hospital.]

(*Concluded from page 373.*)

Here we have a symptomatology which is suggestive of hyperacidity, either simple hyperacidity, or ulcer wth hyperacidity, the symptom complex of duodenal ulcer. The finding, however, is typical of chronic gastritis and showed a low acidity. X-ray examination here was negative, an argument for the absence of any organic cause for the gastritis. The stomach in reacting to disturbance of any kind is apt to give similar symptoms in very different types of disease or disturbance. With this fact in mind, and a knowledge that the most aggravated stomach symptoms, worse than those often seen in even advanced cancer, may occur as part of a neurosis, or as secondary to gall bladder trouble, syphilis, acidosis or anaemia, we should go very slowly in making a positive diagnosis of any special type of a stomach disease from the record of symptoms alone. The conditions which most commonly give a history of symptoms suggestive of organic stomach disease, are gall bladder trouble, appendix trouble, adhesions from old appendix or surgical operation, syphilis and nerve conditions. Often these conditions can be distinguished from actual stomach disease by the physical examination. If not the tube examination or the x-ray examination should make the distinction in many cases. In some cases of these outside conditions, abnormal findings by special methods, as hypersecretion, by tube, or incisura, or abnormality in peristalsis by x-ray similar to the findings in ulcer or cancer may occur. This is especially the case with adhesions involving the stomach. Here there is cause for confusion, but though we may thus be confused in a positive way even with the use of our special methods of research between ulcer or cancer and outside conditions as causes of stomach trouble, we should not be confused where these findings are negative. Organic stomach disease should show some sign besides the record of symptoms, blood or stasis or hypersecretion or an abnormal sediment, by tube or abnormal feces findings, or abnormality of some kind by x-ray, one or the other, and it is a safe plan not to make a positive diagnosis without some such sign or some other definite physical sign, as a tumor or an extreme anemia.

A class of cases which has given me much trouble in the past, is the condition of stomach disturbance associated with neuroses or nerve debility. Often the symptoms in such cases are very aggravated. We find often a long duration of symptoms, with much vomiting and much loss of weight. Here the apparent nerve character of the patient may help diagnosis, but a more important factor is the absence of positive signs by tube or x-ray.

The ptosis cases are another class of difficult cases. Here also we find a lack of positive physical signs save the ptosis signs, which discriminate them from conditions of organic trouble. There have been too many of these nerve cases and ptosis cases operated upon in the past through lack of proper investigation of the case, and a faulty diagnosis. I do not mean to say that ulcer and cancer of the stomach do not exist without giving positive objective signs of some sort. There is doubtless a stage in all cancer cases where no sign is present, but since a history of marked stomach trouble is so common in conditions other than organic stomach disease it is a good plan to keep the rule of not going too far in diagnosis of organic conditions without objective signs.

Another danger in stomach work already emphasized by me, is seen in the misleading character of x-ray findings which occurs fairly often. As a result of my experience up to the present I am very slow to make a positive diagnosis of organic stomach lesion, in many cases by an abnormal x-ray finding alone, that is, when the abnormal x-ray finding is the only abnormal objective finding.

There are cases where we are safe in going by an x-ray finding plus a history without other objective findings, as, for example, where a clear diverticulum is present, or where a nine-hour bismuth residue with absent sphincter is present, but there are, as stated, many abnormal x-ray findings which in some cases actually represent the effect of cancer or ulcer, which may be present with no stomach lesion, or with other conditions. I have seen too many cases operated upon the verdict of the x-ray alone, when good judgment based upon a study of the case by other methods in addition to the x-ray, might have changed the diagnosis. Here is a case in point:

Case 18. J. McN. Age 70. Since extraction of teeth nine months ago the patient has been bothered with excessive watery expectoration. He fills a pint cup in two hours. Within this period he has had distress and burning in epigastrium, often actual pain coming at once after meals and lasting one-half to one hour. Pain often radiates to right back. No nausea or vomiting. Bowels constipated. Loss of 33 pounds of weight in five months. He has lived on liquid food for months owing to the condition of his mouth which makes it impossible to wear plates.

Physical examination: Some tenderness in epigastrium. Hemoglobin, 75%. Wassermann negative. Blood pressure 150.

Tube examination: Fasting contents normal. Test meal contents: Free HCl, 0.2%. Feces negative.

X-ray examination: Well marked delay at the cardiac orifice, irregular outline of fundus. Constriction of mid-portion of stomach. Peristalsis absent on lesser curvature higher up. Conclusion: Extensive pathological process involving the cardia and lesser curvature. Carcinoma. Operation showed no lesion of stomach.

This case was submitted to operation on the ground of the very positive finding by x-ray examination. It was not a merely suggestive finding but one of what is usually considered a positive type. The out about the diagnosis was in the absence of any abnormal finding by tube in the fasting contents. Duodenal lesions unless causing blocking of the pylorus or hypersecretion, often show no abnormality of stomach contents. Old ulcer scars of the lesser curvature may show no abnormality, but it would be very unusual to have a malignant lesion of such extent as the x-ray finding suggested here with a normal tube finding. Many cells would be expected and possibly occult blood.

I have records of at least ten cases where a positive diagnosis of ulcer or cancer by the x-ray operator has led the physician to operate in the face of normal findings in other ways, or to neglect the study of the other aspects of the case, in which neither ulcer nor cancer was found.

The above is an extreme case. As a rule when a markedly abnormal x-ray finding is present some pathological condition is present either in the stomach or in the abdominal tract somewhere. As stated, adhesions are a common cause of x-ray findings similar to those found in cases of cancer or ulcer. Witness cases 12, 13, and 15. Mild abnormalities, as the presence of incisura, are, however, common without actual lesion. Sometimes a finding is present one day and absent the next. Sometimes it shows on some plates and not on others. All these facts incline us to the feeling that we must go very slowly in accepting the x-ray finding as absolutely diagnostic of such conditions, in many cases, unless supported by other strong evidence. This point of support by other findings is illustrated in Cases 14 and 15, in the first positively, in the second negatively.

A third point in connection with the study of stomach cases which has been much impressed upon me in my recent experience is the frequency with which two conditions, syphilis, and alcoholism, or constant use of alcohol, exist as the underlying cause of severe conditions of stomach trouble, suggesting in their symptomatology conditions of organic stomach trouble. Syphilis of the cord has proven capable of being a cause of severe stomach signs suggesting ulcer, in several of my cases. Other cases have had what were apparently actual specific lesions of the stomach. I make it a rule to have a Wassermann test made in all obscure stomach cases, or cases where there is reason in the history to suspect syphilis. In some cases an examination of spinal fluid is necessary, a blood Wassermann being negative, and a fluid finding positive.

Alcohol, particularly the long and constant use of the poison, can cause conditions of stomach trouble which simulate in symptomatology and often in objective findings, as findings of blood, gastritis, etc., conditions of organic stomach trouble. This phenomenon is so marked that I hesitate to make a positive diagnosis of ulcer or cancer of the stomach in a patient addicted to alcohol, whatever the findings.

Here is a case of cord syphilis illustrating my point:

Case 19. H. P., age 34 years, Sept. 26, 1912. Well up to eleven months ago. Then one night after eating had an attack of severe pain, located to left of navel, radiating to ensiform, vomited twice with it, no blood in vomitus. Since then has had some pain or distress after every full meal. About three times a week the pain is very severe and vomits with it, may vomit once or twice with relief, at times about every hour for 24 hours. Has lost 35 lbs. in this period. If very careful of diet has attacks less often. After milk and crackers no distress, but always has some after full meal. Has now been vomiting about every hour for last two days.

Past History. Had an eruption and mucus patches and loss of hair about eight years ago. Treated for two years for syphilis.

Physical examination negative. No tabes signs in reflexes. Abdomen tender generally. No spasm.

Stomach: Fasting contents, 10 c.c., no food, no blood, no stasis. Test meal, HCl, 0.16%.

X-ray: Outline of stomach normal. Peristalsis, extra vigorous. Slight 6-hour residue. Adhesions of cecum. Wassermann negative in blood.

The patient was placed on careful diet. Improved and was sent home.

Nov. 14. Returned. Well up to one week ago, but as patient went back to regular diet began to have distress and vomiting, 15 minutes after meals. Four days ago at 2 p.m. severe pain in epigastrium which lasted 12 hours, with repeated vomiting. Same thing next day at 3. Since then vomiting for 48 hours. Relief for few minutes at a time. Vomitus consists sometimes of food, often of green fluid.

Examination: The patient's face suggests that he is in great pain. Urine gives strong acetone test. He vomits all food. Given glucose by vein; acetone cleared up and vomiting less, but still some pain.

It was decided with 6-hour residue of bismuth and history of vomiting food 24 hours old that duodenal ulcer might be present, especially as no Wassermann test was obtained, and operation was advised.

Operation showed adhesions of cecum. No gallstones, no ulcer. After operation, urine showed slight acetone, but patient did well. Home Nov. 20.

Jan. 9. After operation O.K. up to one week ago. One week ago, after supper, he had pain and vomiting every hour for 24 hours. Three days ago vomited a basin full of black fluid and since then he has had constant pain and some vomiting. Acetone present in urine and vomitus. The patient was given glucose by vein to reduce acidosis.

Jan. 13. Vomiting ceased. Another Wassermann negative.

Jan. 16. Spinal fluid examined, 420 cells, mostly lymphocytes. Wassermann on fluid positive. Given salvarsan on 17th. Vomited after this for 24 hours, then ceased. Second dose on 21st, third on 28th (intraspinous). No vomiting after 19th. Sent home.

This case was apparently syphilis of the nerve centres with reflex stomach symptoms of gastric crisis. The symptoms suggest organic disease of the stomach. The x-ray finding was abnormal but not diagnostic of ulcer.

Syphilis affecting the stomach may also occur as a definite syphilitic lesion of the stomach. Such cases may give all the signs of ulcer or cancer, including tube and x-ray signs. Where we have such a finding with a positive Wassermann on the blood, we should consider syphilis as the cause of stomach symptoms and give salvarsan for a period before deciding to operate upon the case.

I have seen several cases of ulcer of the stomach and one ulcer of the duodenum associated with a positive blood Wassermann. The cases were operated upon as no change in conditions occurred with salvarsan. Ulcers were found but as they were not excised the actual nature of the ulcers was not determined. It is quite possible of course to have a syphilitic ulcer which has formed chronic connective tissue scars which tissue would not yield to specific treatment, though the fresh ulcer might.

Here is a very remarkable case representing the effect of alcholism in causing disorder of the stomach and is a type of disorder which cannot be distinguished from that caused by organic lesion of the stomach due to ulcer or cancer. This case also illustrates that hematemesis and positive blood findings are not always a sign of ulcer or cancer:

Case 20. F. H., 44 years, May, 1911. For 3-4 years the patient has suffered from stomach symptoms, as a rule following sprees of drinking. For a week after a spree he would have nausea, sometimes vomiting, and much dyspepsia. Between spells no dyspepsia.

December, 1910. After a protracted bout, vomited for two days. Noted black color to vomitus and was told by a physician that it was blood. He quit drinking and had no stomach trouble up to one week ago. Then he began to suffer from weakness and dizziness. Noted that his stools were black. No dyspepsia. Came to hospital by advice of physician who said that he was passing blood in his stools.

Examination: Hemoglobin 40%. Physical examination negative.

Tube examination: Fasting contents, 10 c.c. of clear fluid, few blood corpuscles in sediment and faint guaiac test, but finding not distinctive, as the little blood might have been due to irritation of the tube. Test meal: Free HCl, 0.18%. Feces gave positive blood test.

X-ray plate showed irregularity of outline on lesser curvature, and 6-hour bismuth residue. Fluoroscope showed failure of peristalsis at lesser curvature. Discharged after one month, as all bleeding had ceased and he had regained his strength.

Sept 6. Was well after discharge until today, when he vomited a quart of blood. No pain or distress in stomach. X-ray showed some irregularity on lesser curvature. Two weeks later the patient was operated upon, on the possibility of ulcer of lesser curvature (x-ray finding) causing recurrent hemorrhages, though the diagnosis of varices as the cause of bleeding was strongly considered. No evidence of stomach lesion was found. Large varices about esophageal end of stomach. Liver appeared normal. Such possibilities as this are to be considered in cases where hematemesis is the symptom. As a rule, of course, the diagnosis of ulcer is safe in such cases. But where alcoholism is present I hesitate to make the diagnosis of ulcer.

The description of the methods of clinical study which are utilized in the investigation of stomach cases, and of the value of the findings obtained by the use of these methods for diagnosis, with the illustration of the method of procedure and general plan of drawing conclusions from clinical findings in individual cases contained in the report of case records, gives you a good general idea of the subject of the study of stomach cases for purposes of diagnosis.

To summarize the subject matter of this review, I append an outline of the value of the various clinical findings for diagnosis, in the various separate diseases or disturbances of the stomach and duodenum.

1. Fresh bleeding ulcer of the stomach. History: A typical history of this condition is one of a short history of dyspeptic symptoms, as distress soon or late after eating, with finally the vomiting of a quantity of fresh blood. Such a record does not, however, occur in all cases of this type. Also vomiting of blood may occur in cirrhosis or in cancer. Such a record is, however, as a rule sufficient for the diagnosis of ulcer of the stomach or duodenum without resort to further methods of investigation, as tube examination or x-ray examination.

Tube examination. Fasting contents show fresh blood in fair quantity or a dark colored content giving a marked blood test by chemical method.

Feces examination shows a blood test.

X-ray examination often shows no sign in fresh ulcer. It may show incisura and extra vigorous peristalsis.

2. Fresh bleeding ulcer of the duodenum.

History may include vomiting of blood as with gastric ulcer, but often is simply a history of distress in the stomach coming long after eating and relieved by food. Sometimes there is acute pain and a tender point to the right and above the navel. Dizziness and faintness are not uncommon symptoms.

Tube examination may show blood, may show simply hypersecretion, may be entirely negative. Feces examination shows marked blood test. X-ray examination often shows no signs. In some cases irregularity of duodenal outline with extra peristalsis above or pylorospasm are seen.

3. Chronic ulcer of either the stomach or duodenum located at the pylorus or causing narrowing of this opening.

These cases may have a very typical, almost pathognomonic history as follows:

For a long period the patient has suffered off and on from dyspepsia. The symptoms are distress or pain coming, as a rule, long after eating. Symptoms sometimes relieved by food. There is often pyrosis and heartburn. Vomiting may and may not be a feature in the early part of the history. It may be of food or of acid fluid. The trouble may come by spells of a week or a month. In the intervals of a month or more there may be no symptoms. The spells get more frequent and more severe. Finally vomiting becomes a marked factor as contraction of the scar tissue begins to close up the pylorus. Vomiting gives relief for a time. Then dyspepsia returns, of moderate severity the first day, more on the second day until in from 24 to 48 hours from the vomiting there is acute distress and vomiting again. The amount vomited is large, a quart or two. This history is not found in all cases, but at the stage of closure of the pylorus vomiting of large amounts of food is always a feature.

Tube findings in these cases are typical. Fasting contents is of excessive quantity, 200 to 1000 c. c., and contains much food. Often sarcinae. Free HCl is present. A blood finding is rare. Test meal contents show free HCl, often in excessive amount, *i. e.*, hyperacidity. This is the finding in the final stage of constriction of the pylorus. In the earlier stages simply hypersecretion in the fasting contents, 60 to 150 c. c. of fluid, and hyperacidity with the test meal may be the findings. X-ray findings in the final stage are typical. There is a 9- to 24-hour bismuth residue, and absence of sphincter and cap. Peristalsis above pylorus is very deep and vigorous. Often no bismuth is seen to enter the duodenum. In earlier stages there may be simply a six-hour residue and a poorly defined sphincter and cap with extra vigorous peristalsis above.

4. Chronic ulcer of the stomach located in the curvature, or fundus or antrum, that is, located where it causes no blocking of the pylorus. The history in these cases varies greatly. It is often a history of general dyspepsia for a long period, often intervals of freedom, but often continuous, such as may be found in hyperacidity or in nerve dyspepsia. Symptoms may be simply distress, and gas coming soon or late after eating. Vomiting may or may not be a feature. Pyrosis and heartburn may be present. Tube findings vary greatly in these cases. Fasting contents may show hypersecretion, 60 to 100 c. c. of clear acid fluid, with no food. Free HCl present. Blood is rarely found but may be. Often the contents is only 25 to 40 c. c. in amount. As a rule the sediment contains a large number of cells. Test meal contents as a rule show a high percentage of free HCl but may give normal findings.

X-ray findings vary greatly in these cases. Where the ulcer is penetrating or perforating, a large deep scar or diverticulum is seen. There is an area showing irregularity of outline where peristalsis is sharply checked, being vigorous above and below this point. On the wall opposite this region there may be spasmodic contraction, giving an incisura. Often there is a bismuth shadow outside the regular stomach outline. In callous or superficial ulcer the only sign may be an incisura opposite the seat of the ulcer. In some cases of this latter type the x-ray gives no sign of abnormality.

5. Chronic ulcer of the duodenum below and not directly involving the pylorus. These cases often give a typical history, viz:

Dyspeptic attacks over a long period, with intervals of complete freedom from symptoms. During the spells of trouble there is distress, often pain, coming long after eating and relieved by food. There may be pyrosis and heartburn. Real pain is often present, but may be absent. Vomiting may or may not be a feature. The vomitus consists as a rule of acid fluid without food, but may consist of food. The attacks are apt to recur on the advent of cold weather.

This history is always suggestive of duodenal ulcer but a similiar history may occur in cases of functional hyperacidity, or adhesions, and of gastric ulcer. Many cases of duodenal ulcer do not give this typical history. Tube findings may show hypersecretion in the fasting contents. Often the fasting contents is normal in these cases. The test meal contents as a rule show an excess of free HCl. X-ray findings show as a rule in these cases a normal stomach outline and sphincter with irregularity of the duodenal cap or of the duodenum, and peristalsis of the stomach above the pylorus abnormally deep and vigorous. In some cases where the ulcer is penetrating, a diverticulum of the duodenal wall is present. Six-hour bismuth residue may occur.

The clinical picture in these cases depends greatly upon how much obstruction or functional spasm of the pylorus is caused by the ulcer. As stated, if the contraction scar actually narrows the lumen of the pylorus we may have actual food stasis by tube and marked bismuth stasis, with irregularity or absence of duodenal cap by x-ray. Ulcers below the pylorus do not cause actual blocking but often cause spasmodic closure which may result in a finding of hypersecretion, fluid stasis but not food stasis, in the stomach and a six-hour bismuth stasis. Often in the latter type, however, there is no abnormality by tube and by x-ray, simply an irregularity of the duodenum and extra peristalsis above. This sign is always suggestive of ulcer but occurs equally with adhesions involving the duodenum and may be found where no organic trouble is present. A feature of the x-ray findings in these cases of duodenal ulcer may be an abnormally rapid emptying of the stomach in the early stages combined with a retardation of complete emptying—that is, a hyperistalsis with a six-hour bismuth residue.

6. Cancer of the stomach located elsewhere than at the pylorus, that is, not causing obstruction. The history in these cases varies greatly. In some cases there is a history of several months or a year of dyspepsia of indefinite type, loss of appetite, fullness or distress after meals, gas, combined with loss of weight and strength, a history which cannot be distinguished from that of nerve debility and other conditions.

In other cases there is a history of but a few months with a record of vomiting as almost the first symptom of the malady in the case, without any previous dyspepsia. Cancer symptoms are apt to be continuous when once started as contrasted with chronic ulcer symptoms which, save where there is contracture, are as a rule intermittent.

The tube findings show often a fasting contents of somewhat large amount, 30 to 50 c. c, containing a sediment of numerous broken down cells mixed with mucus. Often the positive blood test is present, but this is by no means a constant feature. Free HCl may be absent or present. Sometimes we get fresh blood or a coffee colored contents. These blood and cell containing contents are always suggestive of cancer, but can occur in ulcer or alcoholic gastritis.

Test meal contents may or may not show free HCl. The simple absence of free HCl in a test meal contents is not specially suggestive of cancer, but when such a finding is combined with evidences in the fasting contents findings as blood, or stasis, which mean either cancer or ulcer, this absent free HCl test meal finding is strong confirmatory evidence for cancer.

X-ray findings may show an area of stomach wall where peristalsis is lacking with a sluggish peristalsis over the whole stomach. This latter feature is a specially characteristic finding of cancer as against ulcer of the curvature where peristalsis is apt to be very vigorous above and below the area of absent peristalsis. Often the shadow of the affected area is very irregular and mottled or moth eaten. Sometimes a crater can be made out. It must be borne in mind that these characteristic findings of cancer, are sometimes obtained where no organic lesion of the wall is present, in adhesions, for example, or even with functional disturbances pure and simple. Also that the presence of cancer of the wall can be overlooked by x-ray examination, as it may be by tube examination. Feces finding may show blood, a finding which is rare in chronic ulcer though common, of course, in fresh ulcer.

7. Cancer involving the pylorus.

The history here may be one of gradually increasing dyspepsia symptoms coming finally to daily vomiting of large amounts of contents. Or the symptoms of vomiting after meals may come at the start of symptoms. Most cases have a short history of symptoms as contrasted with cases of ulcer of the pylorus, save the cases where cancer has formed on an old ulcer. Symptoms are, as a rule, continuous when once started. There is often much loss of weight and of strength. Anemia is often marked. Tube findings show in the fasting contents, large amounts of contents with food stasis. Blood may or may not be present, but is much more common in the condition than in ulcer at the pylorus, especially changed blood, discoverable by chemical test. Free HCl may or may not be present. Test meal contents may or may not show free HCl. Where this is absent with the stasis finding in the fasting contents the evidence is good for cancer against ulcer. Where it is present the trouble may be of either type. X-ray finding shows as a rule absence of sphincter and cap, with sluggish stomach peristalsis, as against the active peristalsis in ulcer. There is bismuth stasis, often nine-hour or twenty-four-hour stasis. Often an irregular moth eaten shadow of the wall is seen.

Feces findings often show blood. This is much more common in cancer than in chronic ulcer of the pylorus.

8. Adhesions involving the stomach or duodenum.

There is no definite type of history in this condition. Sometimes the record of symptoms is exactly similar to that described as a typical record of ulcer of the stomach or duodenum, viz, distress or pain coming long after food and relieved by food. Sometimes the story is one of an indefinite type, a dyspepsia similar to the history seen in some cases of cancer, in gall stones, constipation.

Tube findings are often negative in these cases but may be similar to those often seen in ulcer of the stomach, viz., hypersecretion and excess of free HCl. Sometimes with adhesions involving the duodenum we have hypersecretion. Adhesions rarely cause food stasis. X-ray findings may show good evidence of adhesions, viz., a stomach drawn to the right with extra vigorous peristalsis, or an irregularity or dilatation of the duodenum with extra vigorous peristalsis above the pylorus, the exact picture often given by duodenal ulcer. I have seen adhesions to the stomach give a picture by x-ray which was taken to mean cancer. The possibility of adhesions as a cause of stomach symptoms suggesting ulcer has always to be considered. Differentiation may be difficult since both tube and x-ray may give signs with adhesions similar to those found in chronic ulcer. Adhesions not involving the stomach but affecting the intestines, as in cases of appendix trouble, or after surgical operations, often give stomach symptoms which are probably reflex effects. These conditions do not, however, give abnormal findings by tube or x-ray in the stomach or duodenum.

9. Chronic gastritis.

The history of symptoms in these cases is not of a definite type, save where there is a record of much use of alcohol. The stomach signs may be severe, as distress and vomiting, over a considerable period, or they may be simply symptoms of dyspepsia, as fullness after eating and gas eructations. Tube findings show a fasting contents over normal in amount of 40 to 80 c. c. consisting of a mucus filled fluid. The sediment often contains numerous stomach cells. Blood is rarely found in a simple gastritis. Free HCl is, as a rule, absent in an advanced chronic gastritis though traces may be present both in the fasting contents and the test meal contents. Tube findings are very definite for diagnosis in these cases. Gastritis is often an associate of cancer, but it often occurs as a disease by itself. X-ray findings are, as a rule, negative in chronic gastritis. They may show an atonic stomach with sluggish peristalsis. Feces findings are negative.

10. Ptosis of the stomach.

The history of this condition is not very definite. Many cases exist without stomach symptoms. Often the symptoms which are called stomach symptoms are intestinal symptoms or general symptoms of relaxations and low blood pressure. Tube findings are as a rule, negative. There may be delay in the emptying of the stomach, but it does not amount to twelve-hour food stasis. X-ray findings show a low stomach but are often otherwise normal. Six-hour bismuth residue may sometimes be present. Atonic peristaltic action may be present.

11. Hyperacidity of the stomach.

Where this condition exists as an independent condition, *i. e.* not as an associate of ulcer, we often get a history absolutely resembling the history of ulcer cases, both gastric ulcer and duodenal ulcer, viz, a long period of dyspepsia with distress or pain coming long after food with heartburn and pyrosis, sometimes with vomiting. The distress is often described as a gnawing sensation and is relieved by food. Spells of trouble are, as a rule, intermittent with periods of freedom.

Tube findings may show a fasting contents of 50 to 100 c. c. of clear fluid containing free HCl, and no food or blood, *i. e.*, hypersecretion.

Test meal findings show an excess of free HCl in percentage. The fluid portion of the contents is large. Sometimes there is no fasting hypersecretion, simply a test meal hyperacidity. X-ray findings, as a rule, show no abnormality in pure uncomplicated hyperacidity, as they commonly do when the hyperacidity is associated with ulcer. It is important to remember that though hyperacidity is a common symptom of ulcer, it does occur unaccompanied by the lesion.

12. Hypoacidity is a not uncommon condition. It may be an associate of cancer or chronic gastritis or atrophy, but it occurs in uncomplicated form. There is no definite history to these cases. Often the condition is discovered where no record of stomach symptoms is present. Tube findings show a normal fasting contents, absence of free HCl being a frequent normal finding in the fasting contents. The test meal contents show no free HCl.

13. Organic disease of the cardiac orifice and esophagus. Cancer at the cardia or just above in the esophagus may cause obstruction to the passage of the tube. The tube may bring up undigested food content, with no acid if there is obstruction here. If no food has been taken recently or if obstruction is not marked the tube may bring up mucous contents containing an excess of cellular elements. Often fresh blood is obtained.

X-ray in such cases may show retention of bismuth at the cardia, often dilatation of esophagus —sometimes the cancer shadow involving cardia with absence of contraction here.

Cases of cardiac spasm not due to organic disease of cardia may show tube findings of food or mucus as in organic trouble, but not the cellular content found often in cancer. X-ray shows retention and dilatation, but no shadow. Diverticulum may show clearly by x-ray examination.

◆

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. A CRITICAL ANALYSIS OF 134 MICROSCOPICALLY PROVEN CASES.

BY TORR WAGNER HARMER, M.D., BOSTON.

Assistant in Anatomy, Harvard Medical School; Junior Assistant Surgeon, Children's Hospital; Assistant in Surgery, Massachusetts General Hospital.

(*Continued from page 377.*)

CASE REPORTS.

ABDOMINAL WALL.

CASE 41. (Table, Case No. 110.) Case of Dr. M. E. Green. Small round cell sarcoma of the abdominal wall. A man of 20 with growth four inches broad extending from pubes to umbilicus.

Pathological Report. Small round cell sarcoma. After 60 injections of mixed toxins tumor disappeared. Patient in good health without recurrence four and a half years later. Recorded in Group F.

AXILLA.

CASE 42. (Case No. 8.) Small round cell sarcoma of axilla. J. G., 45, female. Shortly after an incomplete operation to remove tumor in axilla, mixed toxins were started and continued several weeks. The mass was of several months' duration, invested axillary vein, and upon microscopical examination proved to be round cell sarcoma. No recurrence 7 years 10 months later. Recorded in Group F.

Case 43. (Case No. 9.) Large round cell sarcoma of axilla. P. B., 67, male. Mass of glands in axilla of three years' duration, varying in size from a hazel nut to a walnut, in all 2½ x 3 inches. Excised as much as possible. Operation incomplete. Toxin treatment immediately started and continued for about 7 months. Recurrence below clavicle 2 years later. During removal of same, axillary vein torn and sutured. Toxins resumed. Arm still swollen 4 months later. (Question of tied vein or recurrence.) Recorded in Group D.

GROIN.

Case 44. (Table, Case No. 66.) Small round cell sarcoma of groin. Case of Dr. Tritch of Findley, Ohio. 62, male. Twice recurrent sarcoma of groin.

Pathological Report. Small round cell sarcoma. Toxin treatment for 3 or 4 months, with gradual and complete disappearance. Patient in good health without recurrence 1½ years later. Recorded in Group F.

Case 45. (Case No. 17.) Small round cell sarcoma of groin. E. C. B., 21, male. A mass in left groin of 3 weeks' duration, developing after a growth was excised.

Pathological Report. Small round cell sarcoma. Quick recurrence. Two months later toxin treatment started. Injections into tumor and buttocks with well-marked reactions. Maximum dose, 5 minims. Tumor practically disappeared, but recurred when treatment was less regularly given. Toxins resumed regularly with entire disappearance. Patient in good health without recurrence over 5 years later. Recorded in Group F.

Case 46. Personal Case. Referred by Drs. D. F. Jones and Wyman Whittemore. Round cell sarcoma of the groin and pelvis. A. A. K., a Syrian of 25. House No. 194236. March 7, 1914, admitted with hard mass size of small grape fruit covering Scarpa's triangle on the left, and passing 2 cm. beneath Poupart's ligament. In places fluctuant, slightly movable and tender. This growth first noticed one year ago and remained size of peanut for two months. For past two weeks growth very rapid with constant pain.

March 8. Operation, Dr. Jones. Semi-circular flap turned inwards, exposing growth, which firmly invests femoral vessels. Incision carried above Poupart's and dissection made along iliac vessels retroperitoneally. Chain of glands felt extending far back in the pelvis. Eradication impossible.

Pathological Report (143-45), Dr. Whitney. Lymphoma. A tumor size of croquet ball with smaller nodules in a chain at one point. Soft, grayish homogeneous section. Microscopical examination shows structure of a lymph node with well marked follicles and great increase of pulp.

Recurrence steadily appeared and in a month, despite x-ray treatment, filled Scarpa's triangle and extended above Poupart's into pelvis. This mass was firm, about 3½ inches broad and 6 inches long.

Toxin treatment started April 9, 1914, and still being given (now ten months). Injections into growth every second or third day. Maximum dose, 11 minims. Reactions often severe. At first there was marked softening and decrease in the size of the mass, then began to grow, producing considerable varicocele. Treatment, however, continued and a gradual diminution in size has occurred. Mass has several times ruptured and discharged. Now there is present, just below Poupart's a mass about 1½ x 1 inches, and another above Poupart's apparently distinct from the first, which evidently extends into the pelvis, seems about size of small egg. The patient is in excellent flesh and color. Recorded in Group E.

INTRA-ABDOMINAL.

Case 47. (Case No. 48.) Round cell sarcoma of omentum, ascending colon, small intestine and liver border. E. J., 23, female. Laparotomy discovered an inoperable mass involving above-named structures.

Pathological Report of Section. Round cell sarcoma. Toxin treatment continued for about 5 months. Injections alternately into abdominal wall and buttocks. Patient in good health without evidence of recurrence 12 years later.

Case 48. (Table, Case No. 1.) Spindle cell sarcoma of cecum, omentum, and mesentery. Case of Dr. Mynter. Laparotomy discovered inoperable growth involving above-mentioned structures.

Pathological Report. Spindle cell sarcoma. Toxin treatment for two months, with entire disappearance of mass. Patient well 4 years later. Recorded in Group F.

Case 49. (Table, Case No. 8.) Inoperable spindle cell intra-abdominal sarcoma. Case of Dr. H. L. Williams, Rochester, N. Y. A woman with an intra-abdominal mass. Section removed.

Pathological Report. Spindle cell sarcoma. Treatment one month with mixed toxins with entire disappearance of mass. Patient well 17 years later. Recorded in Group F.

Case 50. (Table, Case No. 35.) Recurrent intra-abdominal spindle cell sarcoma. Case of Dr. Zabriskie, Greenfield, Mass. A woman of 40. Attempted removal of intra-abdominal growth followed by recurrence.

Pathological Report. Spindle cell sarcoma. Treatment with unfiltered toxins for one year with disappearance of mass. Patient well 12 years later. Recorded in Group F.

Case 51. (Case No. 49.) Round cell sarcoma of iliac fossa. R., 55, male. At exploratory operation a mass the size of two fists of six months' duration was discovered deeply seated in right iliac fossa. Section removed.

Pathological Report. Round cell sarcoma. Toxin treatment with intervals of rest for about a year with almost complete disappearance. Patient well one year later. Recorded in Group E.

Case 52. (Case No. 18.) Round cell sarcoma of small intestine mesentery and glands. W., 25, female. Exploratory laparotomy discovered tumor size of fist, involving above-mentioned structures. Section removed.

Pathological Report. Round cell sarcoma. Toxin treatment started in one month and continued over 4 months. The mass had disappeared, but symptoms of local peritonitis developed (due to necrosis of tumor), and a fecal fistula developed. Patient recovered temporarily but recurrence ensued with death in a few months. Recorded in Group C.

PELVIS.

CASE 53. (Table, Case No. 14.) Inoperable round cell sarcoma of pelvis. Case of Dr. Packard of Boston. 15, female. Pelvic mass which proved inoperable.

Pathological Report of Section. Round cell sarcoma. Treated with unfiltered toxins for a few weeks with disappearance of mass. Patient well 33 months later. Recorded in Group F.

CASE 54. Personal Case. Referred by Dr. S. J. Mixter. R. B., young man.

August 6, 1912, Dr. Mixter enucleated a retroperitoneal mass from the pelvis the size of a fist. The boy's body showed many large brown spots (congenital). In the right thigh just below Scarpa's triangle a hard, nodular, somewhat tender tumor, 2 x 3 x 1 inches. Many other smaller masses scattered over extremities and trunk. Two large masses and one smaller mass were excised.

Pathological Reports (Dr. W. F. Whitney). 1. A small fibro-neuroma of the leg. 2. A large 10 x 3 cm. myxo-fibroma of the leg. 3. A lobulated, firm mass 14 x 6 cm. from the pelvis, a large spindle cell sarcoma. "It is interesting to find these three types of growth, the last two probably degenerative forms of the generalized fibro-neuromatosis. (Von Recklinghausen's disease.)"

For 8 months progressive gain in strength and weight.

June 10, 1913, operation by Dr. Mixter. Coccyx and lower sacrum removed, permitting the shelling out of a mass in several lobes. A mass higher up could still be felt. Through an abdominal incision this growth was found to be the size of a small orange, but its removal was thought inadvisable.

Pathological Report (Dr. W. F. Whitney). Lobulated tumor masses together the size of a fist. On section they were soft, homogeneous and of grayish color. Microscopical examination showed interlacing bundles of large spindle cells. The blood channels had little else for walls but tumor tissue. Spindle cell sarcoma.

The boy's suffering prior to and after this operation was excruciating. Morphia in doses of ½ to ¾ grains was necessary every few hours. In addition, during the 24 hours he received phenacetine, aspirin, codeia, and cannabis indica.

Toxin treatment started June 25, 1913. Injections into abdomen daily, then every other day, then every third day, for 5½ weeks. Maximum dose, 18 minims. Despite severe reactions recurrence rapidly occurred and patient died Nov. 19, 1913.

The toxins gave striking relief of pain for several weeks after their institution. Only small doses of morphia were occasionally necessary.

UTERUS.

CASE 55. (Case No. 67.) Recurrent round cell sarcoma of uterus. McM., 50, female. Removal of large pelvic tumor one year ago.

Pathological Report. Round cell sarcoma. A recurrence which infiltrated the whole pelvis developed, producing bladder symptoms. Toxin treatment started and continued for 2¼ years (118 injections). During two weeks the treatment was stopped followed by return of severe pain. When toxins resumed, pain ceased. Mass entirely disappeared. Patient well 4 years later. Recorded in Group F.

CASE 56. (Case No. 66.) Malignant leiomyoma of uterus. Mrs. X., 42. Hysterectomy for large tumor.

Pathological Report. Leiomyoma. Recurrence within a few months, filling pelvis and apparently involving bladder. Its outline was irregular and consistency hard. Suffering great. Mixed toxins treatment with intervals of rest for 3 years. Pain ceased, mass became progressively smaller and softer and finally disappeared. Three years 11 months after treatment stopped patient in splendid health, and showed on examination little more scar tissue than is natural to hysterectomy. Recorded in Group F.

CASE 57. (Case No. 5, p. 142.) Mixed cell sarcoma of uterus. Case of Dr. J. M. Hundley, of Baltimore. Mrs. A. C., 38. Hysterectomy for infiltrating ovarian tumor size of fetal head.

Pathological Report. Round and spindle cell sarcoma of uterus. In less than a month recurrence firmly fixed to pelvic wall. Toxin treatment started and continued for 33 injections into cervix. Tumor disappeared in 8 months. Patient in good health without recurrence 9 years later. Recorded in Group F.

CASE 58. (Table, Case No. 39.) Mixed cell sarcoma of uterus. Case of Dr. J. C. Willy, New Orleans, La. Woman of 40. Toxin treatment started for large inoperable sarcoma of uterus. Continued with intervals of rest for 5 years. Mass nearly disappeared so that patient was able to get about and perform her regular duties. Went to Europe 6 years later. Recorded in Group E.

CASE 59. (Case No. 71.) Spindle cell sarcoma of uterus. Mrs. S. F., 42. Laparotomy was performed for removal of large pelvic tumor. This was seen to arise from the uterus, but was so extensively adherent that its removal was abandoned. Section taken.

Pathological Report. Edematous leiomyoma. Toxin treatment started and continued for 8 months. Injections into gluteal region. Reaction marked. Mass diminished in size and became more mobile. Second operation then performed. Very extensive.

Pathological Report. Spindle cell sarcoma. Two years later patient perfectly well without evidence of recurrence. Recorded in Group E.

OVARY.

CASE 60. (Table, Case No. 72.) Spindle cell sarcoma of ovary. Case of Dr. F. L. Tosier, Washburn, Maine. Woman of 22. Exploratory laparotomy revealed an inoperable mass arising from the ovary. Section removed.

Pathological Report. Spindle cell sarcoma. Toxins continued for 3 months with entire disappearance of mass. Patient in good health 4 years later. Recorded in Group F.

CASE 61. (Case No. 74.) Inoperable round cell sarcoma of ovary. Mrs. E., 26. A fixed mass, which filled pelvis and extended to umbilicus, was found at laparotomy to be a nodular, dark bluish-white, vascular, very adherent tumor arising from ovary. Section removed, abdomen closed.

Pathological Report. Angiosarcoma. Toxins started in about 2 months and continued for 3 months (47 injections). Progressive decrease in size and increase in mobility. Second operation then performed. A freely movable mass size of a child's head with small pedicle easily removed.

Pathological Report. Round cell sarcoma. Necrotic. Healthy child subsequently born. One year 8 months after toxins stopped, death from acute pneumonia. No evidence of recurrence. Recorded in Group E.

Case 62. (Case No. 72.) Recurrent inoperable mixed cell sarcoma of ovary. M. C., 16. Large tumor of left ovary removed.

Pathological Report. Round and spindle cell sarcoma. In 3 months an inoperable recurrence discovered at laparotomy. A retro-peritoneal tumor filling pelvis and lower abdomen. Toxin treatment. Reactions often severe. No mass evident one month later. Toxins continued. Patient ran a slight temperature attributed to absorption of broken down tumor. Died 22 months after first operation. Recorded in Group C.

Case 63. (Table, Case No. 93.) Recurrent round cell sarcoma of ovary. Case of Dr. Porter, Fort Wayne, Ind. Woman of 40. After operation developed inoperable recurrence in pelvis. Toxin treatment for 2 months with disappearance of mass. Recurrence 4 years later not controlled by toxins. Recorded in Group C.

KIDNEY.

Case 64. (Case No. 6, p. 143.) Round cell sarcoma of kidney. Case of Dr. H. K. McDonald, Halifax, N. S. M. P., 27, female. Incision in loin disclosed tumor of kidney adherent anteriorly to a larger growth. Section removed. Laparotomy revealed large inoperable retro-peritoneal mass.

Pathological Report. Round cell sarcoma. Toxin treatment started in two weeks and continued for about a month with disappearance of tumor. One year later in good health without evidence of recurrence. Recorded in Group F.

Case 65. (p. 146.) Hypernephroma. Case of Mr. Arthur Connell, Sheffield, England. M. W., 37, female. Mass of 4 years' duration in right loin with hematuria. Operation from behind disclosed irregular tumor of kidney. Section removed.

Pathological Report. Hypernephroma. Two weeks later transperitoneal nephrectomy. Huge recurrence 4 months later. Toxin treatment for 4½ months with disappearance of tumor. One year later in good health without evidence of recurrence. Recorded in Group F.

Case 66. Personal Case. F. M., 40, male. Referred by Dr. C. G. Mixter. On May 25, 1913, Dr. Mixter opened a large perinephric abscess through an incision in left flank. After ten ounces of pus had been evacuated a mass larger than a grapefruit still persisted towards median line. Section removed.

Pathological Report (Dr. W. F. Whitney). Sarcoma of kidney involving lumbar muscles.

Toxin treatment started June 15 and continued by Dr. E. H. Baxter of Hyde Park under my direction until Aug. 26 (10 weeks). Maximum dose, 16 minims. Reactions often severe. Five and one-half months after toxins discontinued there still existed a constantly discharging sinus in the flank leading to a mass much reduced in size, not tender and causing no discomfort. He has gained 50 pounds since operation. This small persisting mass may be purely inflammatory residue or a temporarily quiescent sarcoma. He refuses further operation. Recorded in Group E.

BONE (not giant cell).

Case 67 (*Annals of Surgery,* November, 1914, Case 6, p. 540.) Periosteal round cell sarcoma of femur. 58, male. Condition regarded by Dr. W. J. Mayo too advanced even for hip amputation. Toxin treatment with entire disappearance. Patient well 5 years later. Recorded in Group F.

Case 68. (*Annals of Surgery,* November, 1914, p. 562.) Round cell osteo-sarcoma of humerus. A. C., 31, female. An extensive growth of the upper humerus, tip of coracoid and glenoid cavity was curetted as much as possible. Mixed toxins started.

Pathological Report. Round cell osteo-sarcoma. Treatment continued 3 or 4 months with entire disappearance of growth. Four years later no trace of sarcoma. Working as house-maid. Fourteen years after treatment right cerebral hemorrhage with almost complete unilateral paralysis. No trace of sarcoma. Recorded in Group F.

Case 69. (Case No. 66.) Large round cell sarcoma of spine with metastasis in lower jaw. C. E. C., 27, male. Operation was performed for tumor of lower lumbar region the size of two fists.

Pathological Report. Large round cell sarcoma. Within 2 months huge recurrence with depressed unhealed area 6 x 8 inches. The lower jaw presented a growth involving the entire horizontal ramus. Toxin treatment in gluteal region (49 injections). Maximum dose, 8 minims. Softening of jaw and back tumors occurred. Wound healed. Tumors disappeared. Five years and 3 months later patient well and without evidence of recurrence. Recorded in Group F.

Case 70. (Case No. 43.) Spindle cell sarcoma of spine. S., 44. An incomplete operation for growth of spine followed by inoperable recurrence.

Pathological Report. Spindle cell sarcoma. Toxin treatment for two months. Injection into tumor and at a distance. Mass entirely disappeared. Patient well 8 years later. Recorded in Group F.

Case 71. (Table, Case No. 64.) Mixed cell sarcoma of superior maxilla. Case of Dr. Lilienthal. 20, female. An excision of superior maxilla failed to eradicate growth.

Pathological Report. Spindle cell osteo-sarcoma. Mixed toxins were started and continued several months. Patient well two years later. Recorded in Group F.

Case 72. (Case No. 9, p. 147.) Round cell sarcoma of superior maxilla with metastases. Case of Dr. O. K. Winberg, Lake Park, Minn. A. Y., 41, male. Four weeks after being struck by horn of steer developed tumor of superior maxilla. Resection of upper jaw did not eradicate disease and recurrence developed. Swelling of abdomen and joints ensued, also metastases in axilla. Toxin treatment for 5 months (103 injections) with disappearance of jaw tumor and axillary growth. No evidence of recurrence 6 years later, when he died from acute nephritis. Recorded in Group F.

Case 73. (Table, Case No. 85.) Round cell sarcoma of inferior maxilla. Case of Dr. F. R. Calkins, Watertown, Ill. Boy of 12. At operation it was found impossible to eradicate malignant growth of lower jaw.

Pathological Report. Round cell sarcoma. Toxin treatment for 4 months. One and one-half years later boy in good health without recurrence. Recorded in Group F.

Case 74. (Case No. 23.) Round cell sarcoma of radius. F. S. 25, female. Exploratory operation upon a growth involving the lower end of the radius of 6 or 7 months' duration, revealing on microscopical examination round cell sarcoma. One week later this growth involved about 3 inches of radius and presented a fungating mass at site of recent incision. Toxin treatment instituted in 3 days and continued 6 weeks. Maximum dose, 5 minims. Reaction marked. Growth entirely disappeared in 3 weeks. Two years and 9 months later patient perfectly well. Recorded in Group F.

Case 75. (Case No. 37.) Recurrent spindle cell sarcoma of tibia. W. F., 27, male. Canadian farmer. Two efforts at removal with curetting of bone were followed by recurrences.

Pathological Report. Spindle cell sarcoma. Toxin treatment started when a mass at junction of middle and upper thirds of tibia was 3 x 4 inches in extent and ulcerated. Treatment continued for 2 months. Tumor rapidly disappeared. While bone cavity was healing developed a severe attack of erysipelas. Healing complete 2 or 3 weeks later. Fourteen years after treatment discontinued, patient in excellent health with sound and useful leg. Recorded in Group F.

Case 76. (Case No. 22.) Recurrent inoperable spindle cell sarcoma of iliac fossa. Mrs. D., 40. Exploratory laparotomy revealed an inoperable mass in the right iliac fossa size of a cocoanut, attached to ilium and abdominal wall. Section removed.

Pathological Report. Spindle cell sarcoma. Toxin treatment for 6 weeks with entire disappearance of mass. Recurrence of mass extending from crest of ilium to median line and to above umbilicus. Toxin treatment with intervals of rest for 3 months with marked diminution in size. About 3 months later mass had increased considerably. Toxins resumed and continued for 7 months. Tumor entirely disappeared. Twelve years after treatment patient in good health with no traces of the tumor. Recorded in Group F.

Case 77. (Table Case No. 100.) Chondro-sarcoma of ilium. Case of Dr. William Tietz, Spangle, Washington. 34, male. Toxin treatment instituted for mass size of child's head arising from ilium.

Pathological Report had been chondro-sarcoma. Treatment continued for 5 months with entire disappearance of growth. Patient well 1½ years later. Recorded in Group F.

Case 78. (Case No. 32.) Recurrent spindle cell sarcoma of metatarsal bone. F. K., 16, female Growth developed on foot after injury. Third and fourth metatarsals were removed. After a second injury to foot recurrence quickly developed. Foot amputated at ankle joint. The following year a recurrence appeared after an injury to the stump, followed quickly by metastasis in popliteal space. This became size of child's head and was removed. Mixed toxins started for tumor of stump. This entirely disappeared but was followed in 18 months by recurrence both in stump and popliteal space. High amputation (just below trochanter) was followed by recurrence in buttock. An attempt to remove this was unsuccesful. Toxin treatment resumed and continued with intervals of rest for 3 years. Growth disappeared. Patient well 10 years later. Recorded in Group F.

Case 79. (Case No. 29.) Spindle cell sarcoma of sternum. Mrs. G., 38. Tumor of upper sternum involving articulation of clavicle, size of one-half an egg. Section removed.

Pathological Report. Spindle cell sarcoma. Toxin treatment for ten months. Reaction marked. At first tumor increased in size and metastases appeared in neck. Growths later softened, broke and finally disappeared. Maximum dose 30 minims (largest dose in Coley's experience). Four years later death from another cause with no evidence of recurrence. Recorded in Group F.

Case 80. Personal Case. Referred by Dr. W. J. Mixter. Multiple leiomyomata. A. F., female, 55.

Back has always been weak since injured by sled when a child. Fifteen months ago "eleven lb. fibroid-uterus" removed by another surgeon. Seven months ago "small fibroid" removed from sacro-iliac region. For six weeks terrific pain between scapulae. For three weeks pain and progressive weakness of legs. For ten days walking impossible.

Back presents kyphosis and lateral scoliosis of fourth to tenth dorsal vertebrae, and numerous subcutaneous masses (question neurofibromata) one chestnut size opposite seventh cervical vertebra and one walnut-size over sacrum. Right leg can be moved only with great effort. Knee jerks, Babinsky and Oppenheim reflexes all present and extremely active. Right ankle clonus greater than left. Retention of urine, and occasional incontinence of feces.

Dec. 6, 1914. Removal of tumor over sacrum for diagnosis. Pathological report, probably leiomyoma.

Dec. 8. Removal of tumor of right shoulder. Pathological report, leiomyoma.

Dec. 10. Dr. Mixter performed laminectomy at sixth cervical to third dorsal; dura not opened. Upon retracting cord tumor mass visible extending anteriorly and passing above cord in saddle fashion. This growth was of infiltrating character, had invaded marrow of the vertebrae and pleural cavity through one intercostal space. Excised as thoroughly as possible with removal of considerable bone from body of vertebra and first rib. Impossible to eradicate growth. Pathological report, Dr. Whitney, spindle cell sarcoma.

Dec. 11. More power in right leg, and has voided normally.

Dec. 12. Legs better but weakness of left arm.

Dec. 15. Left arm improved but right arm weaker, cannot be raised but can be flexed.

Toxin treatment started Dec. 21, and still being given, now eight weeks. Injections into abdomen. Reactions mild. Maximum dose 23 minims. Progressive increase in strength of legs, arms slowly improving, can walk with assistance. Recorded in Group E.

CASE 81. (Case No. 38.) Inoperable sarcoma of spine involving brain. Baby boy of two years nine months. Tumor of upper spine with paresis of both arms. Exploratory operation showed tumor arising from cervical vertebrae. Section removed.
Pathological report. Fibrosarcoma. Toxin treatment instituted and was still (over two years) in progress when case reported. Maximum dose, 6 minims. Good reactions. After eight months movements of hands and power to hold up head returned. Legs still practically useless. Recorded in Group E.

CASE 82. (*Annals of Surgery,* Nov., 1914, Case XV, p. 541.) Periosteal round cell sarcoma of femur. Case of Dr. Wilmuth of Louisville, Ky. Under toxin treatment tumor of femur practically disappeared. Patient apparently well 18 months later. Recorded in Group E.

CASE 83. (Case No. 40, p. 70.) Round cell sarcoma of femur (periosteal.) H. K., boy of ten. Pain of increasing severity in left leg for several months, when fusiform enlargement of entire left femur 6½ inches long and within 2½ inches of either extremity was discovered. Section removed.
Pathological report. Small round cell sarcoma. Gradual diminution in size. Fifty-seven injections. Maximum dose, 11 minims. Tumor disappeared in a year but shortly afterwards metastases occurred in both orbits and boy died in a few months. Recorded in Group D.

CASE 84. (Table Case No. 34.) Recurrent small round cell sarcoma of superior maxilla. Woman of 29. Had been operated upon for tumor of upper jaw; eradication impossible. Recurrence developed which involved the orbit.
Pathological report. Round cell. Daily injections into tumor for five weeks. Maximum dose 12 minims. Entire disappearance by sloughing. Fourteen months later no local recurrence but probably metastasis in tibia. Recorded in Group D.

CASE 85. (Case No. 31.) Periosteal spindle cell sarcoma of humerus. M. L., 35, male. Spiral fracture of left humerus. X-ray showed no growth. Two weeks later growth at site of fracture which increased rapidly in size. Several months later an exploratory operation showed growth involved upper third of bone. Central portion of growth curetted.
Pathological report. Spindle cell sarcoma. Toxin treatment in a few days and continued for 18 months. Marked diminution in size and immediate cessation of pain. Spontaneous union of pathological fracture in a few weeks. Despite several currettings growth persisted and finally shoulder joint amputation performed. Six months later metastases in pectoral region removed and toxins resumed. Two years later patient in good health. Recorded in Group C.

(To be continued.)

◆

Book Reviews.

Guiding Principles in Surgical Practice. By FREDERICK-EMIL NEEF, B.S., M.L., M.D. New York: Surgery Publishing Company. 1914.

Dr. Neef has, according to his own statements, undertaken the tedious task of formulating a system where there was none. It is an attractive little volume of somewhat less than 200 pages. Although he limits his title to General Principles, he goes into accurate and satisfactory details in all applications of these principles, at least in so far as the principles are those applicable to the surgical operative attack, the preparation for this attack and its after treatment. He has reduced things to their simplest essentials and avoids unnecessary elaboration. In his chapter on Anesthesia, after referring to reasons for displacing chloroform by the less toxic ether, he adds, "chloroform has not yet been displaced." Upon this point we could hardly agree for with the exception of the exigencies of war and in the tropical countries, chloroform has been displaced to a very considerable degree, and is being constantly displaced more and more. Local anesthesia, spinal anesthesia and anoci-association are not considered. The book is interesting and pleasant to read. Marginal notes in red ink attract the eye, and on the whole are an addition to the mechanical structure of the book. With so many large text-books at hand containing long chapters upon surgical principles, it may happen that Dr. Neef's volume will not attract the attention it merits.

Operative Surgery. The Head and Neck, the *Thorax and the Abdomen.* By EDWARD H. TAYLOR, M.D., B.S. (Dub. Univ.), F.R.C.S.I.; Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital. New York: William Wood and Company. 1914.

It would seem as if there existed at present a sufficient number of worthy text-books on the subject of operative surgery; yet the more we examine Taylor's book, the more we must acknowledge that it justifies its existence, and that it has added a literally beautiful book to our surgical library. The plates, whether they are diagrams, outlines, photographs, half-tones, or color plates, are extremely fine. They justify superlatives. The book comes from the pen of an Irishman and covers only the operative procedures most frequently required in general surgical practice upon the head and trunk. Surgical anatomy preceding the various sections is concise, but adequate. At the end of the sub-divisions of the chapters are valuable and always suggestive comments. Excellent use is made of the varying sizes and styles of type in headings and subdivisions of the text. The book is a large one in appearance, although as a matter of fact it contains but 500 pages. It produces a most favorable impression on the reviewer, and on account of the unusual combination of brevity, the high level of illustration and the extensive experience and undoubted ability of its author, it should become a favorite reference book in America.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, MARCH 18, 1915.

Editors.

Robert M. Green, M.D., *Editor-in-Chief.*
Walter L. Burrage, M.D.
Frederick T. Lord, M.D. *For the Massachusetts Medical Society.*

Committee of Consulting Editors.

Walter B. Cannon, M.D.
Harvey Cushing, M.D.
David L. Edsall, M.D.
Reid Hunt, M.D.
Roger I. Lee, M.D.
Allan J. McLaughlin, M.D.
Robert B. Osgood, M.D.
Milton J. Rosenau, M.D.
Edward C. Streeter, M.D.
E. W. Taylor, M.D.

Advisory Committee.

Edward C. Streeter, M.D., *Boston, Chairman.*
Walter P. Bowers, M.D., Clinton.
Homer Gage, M.D., Worcester.
Joel E. Goldthwait, M.D., Boston.
Lyman A. Jones, M.D., North Adams.
Hugh Williams. M.D., Boston.
Alfred Worcester, M.D., Waltham.
Robert B. Osgood, M.D., Boston, *Secretary.*

Ernest Gregory, *Manager.* W. M. Leonard, *Consulting Manager.*

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 *Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

Ernest Gregory, *Manager.*

126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

HARMONIZATION OF STATE AND FEDERAL NARCOTIC LAWS.

In another column of this issue of the Journal we publish a communication presenting questions about the operation of the new Harrison anti-narcotic law. These questions are excellent examples of the type of queries which must naturally arise in the minds of practitioners under the somewhat puzzling new conditions established by the enactment and enforcement of this law. They, therefore, deserve particularly careful and explicit reply, since the questions which have occurred to one will undoubtedly occur also simultaneously to many.

As we have very clearly stated in these pages, there are two narcotic laws which affect us at this time, the state law, which has been in effect since Jan. 1, 1915, and the federal law, which became active Mar. 1, 1915.

We also called our readers' attention to the fact that these two enactments do not harmonize, and directed particular attention to the provision in the state law governing compound pills, tablets and powders. These preparations may be dispensed and no record made of them, under the state law, if they do not contain more than 1/20 gr. of morphine or 1/4 gr. codeine, or any of their salts. Tablets containing *heroin* are not exempt, nor are suppositories.

The federal law does not exempt any of these preparations.

The *state law does not exempt any drugs from record which are dispensed at the time of a personal visit.* The federal law does this, but does not define the length of time covered by a personal visit. It may be reasonably interpreted to mean such medication as is needed to carry the patient along until the next visit of the physician, or for a period of 24 hours. It will be seen by this that the administration of morphine hypodermatically and the dispensing of morphine tablets in the case cited would comply with the federal law, if no record were made, but would violate the state law.

At a meeting of the Chamber of Commerce of the United States of America, on February 3, 1915, Mr. Charles Wesley Dunn presented an address advocating uniformity of state and national food and drug laws throughout this country; and on February 15 a special committee of the Chamber of Commerce reported a series of recommendations for legislation toward this end. Among these was recommended the enactment throughout the Union of a uniform state narcotic law "modeled after, and supplementing to the necessary degree, the recently enacted (Harrison) federal narcotic law, thereby to promote the effective, coöperative and harmonious regulation of the commerce in and the handling of narcotic drugs throughout the United States." A suggested draft for such a law was appended to the report, "with due appreciation of the fact that modifications may probably be necessary to meet local and other conditions."

In Massachusetts the movement has already been undertaken to establish such state legislation as shall accomplish this end and remove the present discrepancies and conflicts between the federal law and the previously existing state law. The bill proposed for this purpose (House No. 1814) has been reported in part as follows by the committee of public health:—

"Section 1. It shall be unlawful for any person, firm or corporation to sell, furnish, give away or deliver coca leaves or any cocaine or any alpha or beta eucaine or any synthetic substitute for them, or any salts, compound or derivative thereof, except decocainized coca leaves and preparations thereof, or any opium, morphine, heroin, codeine or any preparation thereof, or any salt, compound or derivative of the same, except upon the written order of a manufacturer or jobber in drugs, wholesale druggist, registered pharmacist actively engaged in business as such, physician, veterinarian, dentist registered under the laws of the state in which he resides or an incorporated hospital, college or scientific institution through its superintendent or official in immediate charge, or upon the written prescription of a physician, dentist or veterinarian, registered under the laws of the state in which he resides, bearing the date when given, his office address, the registry number given him under public acts two hundred and twenty-three of the sixty-third congress, approved December seventeenth, nineteen hundred and fourteen, *the signature in full* of the physician, dentist or veterinarian giving it, the name and address of the patient for whom prescribed, which prescription, when filled, shall show the date of filling and shall be retained on file by the druggist filling it for a period of at least two years. The prescription shall not again be filled, nor shall a copy of the same be made, except for the purpose of record by the druggist filling the same, and it shall at all times be open to inspection by the officers of the state department of health, the board of registration in pharmacy, the board of registration in medicine and the authorized agents of said departments and boards and by the police authorities and police officers of cities and towns."

The remainder of this section provides the exceptions applying to the prescription, sale or distribution of preparations not containing more than a stated minimal quantity of the given narcotic drug.

"Section 2. It shall be unlawful for any practitioner of veterinary medicine or surgery to prescribe any of the drugs mentioned in section one of this act for the use of a human being, and it shall be unlawful for any physician or dentist to prescribe, sell, give away or deliver any coca leaves or any cocaine or any alpha or beta eucaine or any compound, derivative or synthetic substitute for them, or opium, morphine, heroin, codeine or any preparation thereof, or any salt, compound or derivative of said substance to any person known to such physician or dentist to be an habitual user of those drugs.

"Section 3. The provisions of this act shall not be construed to prevent any lawfully authorized practitioner of medicine or of veterinary medicine or of dentistry from prescribing, administering or dispensing any drugs that may be indicated for any patient under his care."

The remainder of this section outlines the form and method in which the record book of drugs prescribed, dispensed or administered shall be kept; and concludes with a provision that the "above record shall not be required where the physician or dentist administers, *outside of his office,* any of the drugs mentioned in this act, to a patient on whom he personally attends."

Sections 4 and 5 contain provisions relating to manufacturers or jobbers of drugs, wholesale druggists and registered pharmacists.

Sections 6 and 7 define the necessary licensure of persons coming within the provision of the act.

Section 8 provides for the exemption of common carriers engaged in transporting narcotic drugs, including nurses or assistants acting as the agents of physicians, dentists and veterinaries.

The remainder of the act is as follows:—

"Section 9. The provisions of this act, except those sections which require the ordering of the above enumerated drugs on an official order blank, and the keeping of the same on file, and the keeping of the record relative thereto, shall apply to cannabis indica and canabis sativa, except the same shall not apply to prescriptions, preparations or remedies which do not contain more than one-half grain of extract of cannabis indica or more than one-half grain of extract of cannabis sativa in one fluid ounce, or if a solid or semi-solid preparation, to the avoirdupois ounce, nor to liniments, ointments or other preparations containing cannabis indica and cannabis sativa, which are prepared for external use only.

"Section 10. The repeal of any law by this act shall not affect any action, suit or prosecution pending at the time of the repeal for an offense committed or for the recovery of a penalty, or forfeiture incurred under any of the laws repealed.

"Section 11. Whoever violates any provision of this act shall be deemed guilty of a misdemeanor, and shall be punished by a fine of not more than one thousand dollars, or by imprisonment in the house of correction or jail for a term not exceeding one year, or by both such fine and imprisonment.

"Section 12. Chapter six hundred and ninety-four and chapter seven hundred and eighty-eight of the acts of the year nineteen hundred and fourteen and sections two to six, inclusive, of chapter three hundred and eighty-seven of the acts of the year nineteen hundred and ten are hereby repealed.

"Section 13. This act shall take effect upon the first day of April, nineteen hundred and fifteen."

Two points in this proposed law seem to deserve particular comment. In Section 1 it is provided that each prescription shall bear "*the* *signature in full* of the physician, dentist or veterinarian giving it." Literally interpreted, this clause would mean the signing of the full Christian and middle name, if any, a procedure inconvenient and likely often not to be complied with. A clause should be added to the bill at this point defining the term, "signature in full," which, for the purposes of this act, is presumably equivalent to legal signature, that is, the habitual manner in which a name is signed.

The second point calling for comment is in the provision at the close of Section 3, which, as it stands, would require every physician or dentist to keep a complete record of any narcotic drugs administered to patients *in his office.* With the increasing use of local anesthesia for minor and even semi-major surgical operations performable in a surgeon's office, the inconvenience and impracticability of complying with this provision are obvious. There seems no valid reason why the same exemptions should not apply to drugs administered by a physician or dentist in his office, as to those administered by him to patients in their homes or at hospital. The clause, "*outside of his office,*" should, therefore, we believe, be stricken from the prospective act.

In conclusion, we strongly urge the adoption of the personal visit exemption clause in the proposed state law which has been introduced in the House in an attempt to harmonize the state with the federal statute. Physicians who feel that this is desirable should regard it as their duty to the profession, as well as their personal interest, to express their opinion immediately to their representatives in the legislature.

◆

FAMILIAL DISEASES.

IN another column we publish a detailed report of a series of cases of progressive neuromuscular atrophy occurring in a family without heredity. The complex group of conditions, of which the cases described are examples, is attracting more and more attention as experience widens in these often exquisitely hereditary conditions. The cases reported by Dr. Hatch are of interest from the fact that although the disease described must be regarded as one of the hereditary type, it could not be discovered that it had appeared in previous generations. It must, of course, happen, and frequently has been observed, that such diseases occur spontaneously in one generation, to be thereafter indefinitely transmitted; but what the conditions are which should suddenly cause this degenerative tendency remain, as yet, wholly obscure. It is not to be questioned that the intensive studies now being made on syphilis as a cause of race degeneracy must be considered in this connection, but as in all such problems, whatever its influence may prove to be, it can manifestly at present not be demonstrated why these particular forms of degeneration should occur. The future, no doubt, opens a wide field of speculation and possible investigation in this really practical field. In general it may be said that students of heredity may, with advantage, devote their energies to the investigation of such demonstrated family affections, rather than be led astray, as they too often are, into unfruitful fields. Apart from the interest which is connected with the family appearance of this group of disorders, a more satisfactory classification than we have at present is much to be desired, as, for example, a clearer line of demarcation, if such can be made, between the primary myopathies, the spinal atrophies and transitional forms, such as the cases reported by Dr. Hatch. We desire particularly to call attention to the original contribution of Dr. Hatch's article in the use of electrocardiograms to demonstrate graphically muscular tremors. It is altogether possible that the further use of this method may throw light upon the question of tremors in general and their possible diagnostic significance. A further contribution of importance is the systematic examination of the spinal fluid in such cases. Although these fluids were negative, so far as Wassermann reactions were concerned, they showed interesting alterations in the albumin and globulin content and a pathological gold chloride reaction. This also affords a valuable suggestion for future research. Such cases as these should be reported in detail in order that ultimately statistical material may be secured from which classifications of value may be made.

◆

THE HARVARD EXPEDITIONARY UNIT.

ON Wednesday of this week, March 17, the Harvard unit sailed from Boston, aboard the steamer *Canopic,* for Gibraltar, whence it will proceed for service at the American Ambulance Hospital in Neuilly, Paris. This unit will relieve that from the Western Reserve Medical School of Cleveland under charge of Dr. George W. Crile, which has served at the hospital since January 1. The Harvard unit will have control of 150 beds and will continue on service from April 1 to June 30. It will be in charge of Dr. Harvey Cushing as surgeon-in-chief and Dr. Robert B. Greenough as surgeon and executive officer. The further personnel of the unit will be made up as follows:—

"Richard P. Strong, M.D., professor of tropical medicine, bacteriologist; Robert B. Osgood, M.D., instructor in orthopedics, orthopedic surgeon; Beth Vincent, M.D., assistant in surgery, assistant surgeon; Walter M. Boothby, M.D., lecturer in anesthesia, anesthetist; Fred A. Coller, M.D., '12, Elliot C. Cutler, M.D., '13. Philip D. Wilson, M.D., '12, and Marius N. Smith-Peterson, M.D., '14, resident surgeons; Lyman G. Barton. Jr., M.D., '12, surgical assistant; Orville F. Rogers, Jr., M.D., '12, medical assistant; George Benet, M.D., '13, laboratory assistant; Miss Edith I. Cox, Miss Geraldine K. Martin. Miss Helen Parks and Miss Marion Wilson, operating nurses."

The Journal extends its most cordial good wishes for the safety and success of this Boston expedition, whose work will be not only of profit to its members, but of distinction and credit to the profession of this city and of New England. It is the expectation and hope of the Journal to publish, for the interest and instruction of its readers, frequent communications from members of this expedition while it is at the front, and, after its return, more extended articles of medical research based on its experience.

◆

COMPLIMENTARY DINNER TO DR. THEOBALD SMITH.

After a service of more than twenty years to the Harvard Medical School, Dr. Theobald Smith is to sever his connection with the University, to assume larger duties in conjunction with the work of the Rockefeller Institute for Medical Research. The distinction of Dr. Smith's services to his college and to the advancement of medical science leads his colleagues to desire that some permanent memorial should be made on the occasion of his departure. The interest of Mr. Bela Pratt has been secured, and it is proposed to present a bas-relief of Professor Smith to the Medical School. Reductions of this relief will be made and presented to contributors to the fund.

In addition to this permanent memorial, invitations have been issued to a complimentary subscription dinner to be given to Dr. Smith on Saturday evening, April 17, at the Harvard Club of Boston. The governors of the club have given the use of the large hall, and President Lowell is to preside. Already 150 acceptances have been received so that a large and successful gathering is assured. It is desired, however, that as many physicians as possible should take advantage of this opportunity to express the appreciation and realization of the profession of the importance and distinction of Dr. Smith's service to medical science and research, and their cordial good wishes and confidence in his promise of even greater achievement in the new duties to which he goes. The subscription ($5.00) of all those wishing to take part in this occasion should be sent by March 20 to Dr. Marshal Fabyan, 379 Commonwealth Avenue, Boston.

◆

MEDICAL NOTES.

British Vital Statistics for 1914.—Statistics recently published in England show that during the year 1914 the crude death-rate of England and Wales was 13.9, the infant mortality 105 per thousand births, and the birth-rate 23.6. It is somewhat striking that the birth-rate is 25 in the larger cities, 24 in the smaller towns, and only 22 in the rural sections, whereas the corresponding infant mortality in these respective regions is 113, 104 and 93, respectively. The city of London, however, shows a higher birth-rate and a lower infant mortality than those of any of the other large British cities.

Overcrowding and Tuberculosis in Bradford.—In a discussion before a recent meeting of the English National Anti-tuberculosis Association, Dr. Harold Varrow of Bradford, Yorkshire, called renewed attention to the much greater prevalence of tuberculosis among the overcrowded population of that city. In Bradford 106,000 live in houses having three rooms or less and 170,000 live in houses having four or more rooms. Nearly two-thirds of the pulmonary tuberculosis in the city occurs in the former group. Dr. Varrow pointed out that the eradication of tuberculosis is hardly to be expected until such overcrowding of urban population is controlled.

Low Death-Rate in New York.—The mortality in Greater New York for the past week was noteworthy by reason of the extreme low point reached by the death-rate, namely, 13.91 per 1000 of the population. This is an unprecedentedly low figure for this season of the year in this climate. The good showing of the figures of the past week, as compared with those of the corresponding week of 1914, is heightened by reason of the high mortality this time a year ago, due to exceedingly trying meteorological conditions and to the increase in the prevalence of influenza. A comparison of the two weeks will show that in the week of March 7, 1914 the deaths from influenza were almost treble, from diphtheria and croup and scarlet fever almost double, and from measles quadruple those of last week.

Viewed from the point of age, every age group showed a noticeably decreased mortality from the week of 1914. Under 5 years of age, the decrease was 118 deaths, between 5 and 65 years of age the decrease was 174 deaths, at 65 years of age and over, the decrease was 117 deaths.

These comparisons are made without allowing for any increase in population. If such allowance be made, the total decrease in the mortality of the past week with that of 1914 would be 486 deaths.

The death-rate for the first ten weeks was 13.90 per 1000 of the population, as against 15.41 for the corresponding period in 1914, a decrease of 1.51 of a point.

Sanitation in Porto Rico.—A recent report of the director of sanitation of Porto Rico, reprinted from the report of the governor of that island, records the activities of the department of public sanitation for the fiscal year ended June 30, 1914. During this period the total number of deaths in the island was 21,775, corresponding to a rate of 18.6 per thousand, as contrasted with a rate of 31.5 in 1888 and 40.8 in 1900. The report contains statistics of morbidity and mortality for the northern, eastern and southern districts of the island and an account of mosquito eradication in 50,574 premises on which a total of 55,567 breeding places were found and variously destroyed. The report also describes details of water supply, sewer system and municipal sanitation. The division of veterinary inspection reports forty-three positive cases of glanders. There are careful accounts of the prevalence and control of the various important infections on the island and a description of the work of the biological laboratory. The remainder of the report is occupied with statistical tables.

Foot and Mouth Disease in New York.—Report from Syracuse, N. Y., states that on March 8 a quarantine order was extended by the New York State Commissioner of Agriculture over Onondaga County because of the recent spread of foot and mouth disease in that region. The situation is said to be particularly serious in the territory surrounding Syracuse, where 231 cattle have recently been killed.

Award of the Gross Prize.—It is announced by the trustees that the Samuel D. Gross prize of the Philadelphia Academy of Surgery for the year 1915 has been awarded to Dr. John Lawrence Yates of Milwaukee, Wis., for his essay on "Surgery in the Treatment of Hodgkins' Disease." The amount of this prize is $1500.

Rabies in California.—The California State Board of Health has recently published the results of an investigation which it has made in the prevalence of rabies in that state during the past five years. Since 1909 the disease has occurred in every section of the state except the northern coast and the mountain counties, and a few others where the population is very sparse. In 1912, 300 positive cases occurred in dogs, and in 1913, 320. During the last nine months of 1914 there was an abrupt decrease in the number of cases, which reached a total of only 100 in that year. During the quinquennium in question, there were 25 human deaths from the disease in California. It is interesting to note, and somewhat contrary to the usual conception, that, at least during the period under consideration, the disease was more prevalent in winter than in summer.

Infantile Immunization Against Tuberculosis.—At a recent session of the British Royal Institute of Public Health in Edinburgh, Dr. Rist of Paris discussed the subject of bovine tuberculosis, to which he considers infants are peculiarly susceptible. At this meeting it was also suggested that early bovine infection, from which a child recovers, may, perhaps, serve the purpose of permanent immunization against infection with the human tubercle bacillus in later life.

European War Notes.—Report from Serbia, by way of Berlin on March 11, states that typhus fever is extensively prevalent in Serbia. Nine American nurses have been infected, 63 physicians, including 2 Americans, have died of the disease, and the total number of deaths from it is said to reach several thousand.

It was announced on March 10 that the American Red Cross will soon send to Europe two additional units, of 3 surgeons and 12 nurses each, for service with the Belgian army in the field.

On March 11, the total of the New York Belgian relief fund amounted to $969,851.24; the New York Red Cross fund to $467,779.75; the American Ambulance Hospital fund to $348,389.82; the American Jewish relief fund to $532,937.14; and the New York Polish relief fund to $25,225.47.

On March 13, the total of the New England Belgian relief fund amounted to $233,127.57; the Massachusetts Red Cross fund to $111,904.93; the Boston Jewish relief fund to $44,274.42; the Polish relief fund to $36,175.18; and the Lithuanian relief fund to $12,303.95.

BOSTON AND NEW ENGLAND.

Hospital Bequests.—The will of the late Calvin W. Capen of Dedham, Mass., which was filed recently in the Norfolk Probate Court, leaves a residuary bequest, which it is estimated will amount to about $100,000, to the Elizabeth F. Capen Hospital fund. This fund of $40,000 had been already given by the testator to build a hospital in memory of his wife.

The will of the late William H. Storey of South Boston, Mass., which was filed on March 8 at the Suffolk County Probate office, contains a bequest of $10,000 for the Boston Floating Hospital. The remainder of the estate is left in trust for the benefit of the testator's family, but after the death of certain beneficiaries, one-quarter of the income of the residue is to be paid to the Vincent Memorial Hospital of Boston.

Epizoötic of Foot and Mouth Disease.—On March 4 the quarantine in this state for foot and mouth disease was extended to include the town of Woburn, although no cases have, as yet, been discovered in that community.

On March 5 the quarantine was also extended to Melrose, Mass., and a number of infected or suspected cattle were killed in Lexington and Waltham, Mass. Two suspected human cases of the disease have been reported at Worcester, Mass., one of which is believed to be positive. No new cases among cattle have been reported since March 2, when 30 were found at North Grafton, Mass. At the same time additional powers have been given by the executive council to Dr. Lester H. Howard, commissioner of animal industry, to meet the situation arising from this recrudescent epizoötic.

The order approved authorizes the commissioner to restrict at any time by order the movement of cattle, sheep, other ruminants and swine in any city or town of the Commonwealth, when, in his opinion, the control and eradication of foot and mouth disease require such action. He is empowered to extend or diminish the radius of quarantined areas surrounding premises on which foot and mouth disease exists or has existed since Nov. 5, 1914.

According to present indications, the total number of cattle destroyed by this second epizootic will approximate 900, as compared with 1156 in the first outbreak.

On March 9, nine new cases of foot and mouth disease were discovered at Marlboro, Mass., and on March 10, on account of the prevalence of the disease in Everett, the local quarantine was extended to the adjacent city of Chelsea.

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending March 9, 1915: Diphtheria, 77, of which 7 were non-residents; scarlatina, 77, of which 7 were non-residents; typhoid fever, 3; measles, 134, of which 2 were non-residents; tuberculosis,73, of which 1 was non-resident. The death-rate of the reported deaths for the week was 18.17.

Obituary.

SAMUEL WOOD LANGMAID, M.D.

Dr. Samuel Wood Langmaid died in Brookline, February 3, 1915, in his 78th year, closing a medical career which covered the period of half a century. He was born in Boston, June 26, 1837. His parents, Samuel H. and Dorcas Sawyer Langmaid, at the time of his birth were living on Charles Street; later they moved to Roxbury, and in 1855 to Cambridge. He was fitted for college at the Roxbury Latin School and was a member of the Harvard Class of 1859. A year after graduation from college he entered the Medical School, completing his course as surgical house officer at the Massachusetts General Hospital, and graduating in 1864, with the degrees of A.M. and M.D.

In June, 1864, Dr. Langmaid volunteered, and became acting assistant surgeon in the United States Army. He was at first ordered to White House Landing, Va., but the next month was sent to the hospital at Readville, Mass., where he served until the closing of the hospital a year later. After a few months in Europe he began general practice in Boston on Park Square. He was on the surgical staff of the Carney Hospital from 1868 to 1880. In 1866 the Children's Hospital was founded and he became one of the surgeons, serving until after the new building on Huntington Avenue was opened in 1882. He then gave up general surgery and established a department for diseases of the throat, of which he had charge for many years.

When Dr. Langmaid began practice the specialty of laryngology was slowly developing in Europe. On account of his own voice and his association with singers, he followed with interest everything connected with the larynx, and became one of the pioneers of the specialty in this country. He joined the American Laryngological Association in 1880, two years after its foundation, and was president in 1891, when the Association met in Boston. In 1881 he was appointed assistant physician for diseases of the throat in Dr. Knight's clinic at the Massachusetts General Hospital, and took charge of this clinic for six months in every year until 1892, when he resigned. He became a member of the American Climatological Association in 1887, and was vice-president in 1901. He was a member of the Massachusetts Medical Society, and of other medical societies and clubs in Boston.

Dr. Langmaid's private practice became more and more limited to the upper respiratory tract, and after about 1880 he gradually withdrew from other work. He had many patients among the musical and theatrical professions, and was often consulted by visiting singers and actors. He occasionally contributed to the literature of the larynx. He had three papers in the old *Archives of Laryngology*, which in 1880 started its short lived career. These papers were on "The Application of the Principles of Vocal Culture," "On the Singing Voice," and "A Common Form of Vocal Disability." He later published a dozen or more other articles, which are listed in the *Transactions of the American Laryngological Association* for 1898 and 1908. During the latter years of his life his health became poor, and he finally retired from practice in 1912.

Dr. Langmaid did much for vocal music in Boston. He had a beautiful tenor voice and he took every opportunity to promote good singing. While in college he sang in the college chapel, and was leader of the Glee Club. So irrepressible was his music that he was once summoned before the authorities for singing as he walked through the yard. In the course of his life he became a member of many musical associations, the Chickering Club, the Parker Club, the Boylston Club and later the Apollo Club and the Cecilia. Of his many interests, perhaps the one nearest to his heart outside of medicine was the Harvard Musical Association, of which he was president for many years. He was also a director of the New England Conservatory of Music. or a quarter of a century he sang tenor in the quartet at Trinity Church, before the establishment of the vested choir. He had a large acquaintance, not only among the musical people of Boston, but also among the noted singers of the world, several of whom were at times his patients.

His interests and his friendships were not confined to medical and musical circles. As a boy he spent his summer vacations in New Hampshire, and acquired a true sportsman's love for the woods, and for hunting and fishing. In later life, whenever he had the opportunity, he went off with his dogs into the country, or with his rod to some trout stream. He thoroughly enjoyed the life in the open, and the intelligence of his dog, and the fine art of fishing. But equally he sought the society of his fellow men and was a particularly sociable and congenial companion. He was a charter member of the Tavern Club and for some time a member of the Saint Botolph Club.

Dr. Langmaid married in 1870 Miss Ella M. Tuttle, and had two daughters, Miss Bertha Langmaid and Mrs. Conrad Hobbs. Mrs. Langmaid and both daughters survive him.

Miscellany.

MEDICAL EXTRACTS FROM SEVENTEENTH CENTURY LETTERS.

In a recent issue of the *Lancet* are published a number of extracts on medical topics from seventeenth century letters in the valuable manuscript collection of the Duke of Portland at Welbeck Abbey. Some of these are as follows:—

"*Richard Andrews to the Countess of Newcastle*, at Welbeck. London, May 10th, 1633.—"I understand your ladyship is with child, and that therefore you decide to be furnished with such help in physics as shall be fit, and such as you have had heretofore. I have therefore sent down to you a powder to hasten the birth and make it more easy. It is made of cassia, saffron, and borax. When you are in travail I would have you take of the powder as much as will lie upon a groat in a spoonful of burnt white wine, or bezoar water, or spirit of saffron. If you should be long in labour and grow faint, there is an excellent cinnamon water to take a small spoonful of to refresh your spirits. But there is a water in a little glass, called Adrian Gilbert's water, which is commended above all others in childbirth. There are other comfortable waters and spirits sent down in a little 'seller,' of which you may make use now or at any time. There is a glass of *confectio alehermes* to take a little of when you are fainting, and in the evening you may take the quantity of a dry bean, either alone or mingled with cordial water, and four or five grains of bezoar stone. I have also sent you an eagle stone which in time of labour being tied about the thigh will make the labour easier."

"*Matthew Boucherett to the Earl of Newcastle*, Welbeck. April 23rd, 1637.—To enter into a discourse of the mineral waters lately found in Derbyshire, in Kedlaston Park, though I could wish it had fallen into the hands of a more skilful inquisitor of nature, yet since your lordship commanded it from me I will deliver my opinion briefly. That I may treat of them in order, it is necessary to find out from what mineral they borrow their quality. That which we first meet with is their strong smell, which shows the waters pass through a matrix where bitumen or a kind of clammy clay, like pitch, being of the nature of brimstone, is generated. If anyone had rather determine that they pass through sulphurous veins, I am not he that will absolutely contradict him, yet I must tell him the country people affirm that silver being cast into that water, taken from the spring head, was presently died of a gold colour, and I cannot conceive how that should come from sulphur, but rather from the aforesaid bitumen joined with nitre or some other fossil salt, whose tenuity doth dye the silver of a gold colour. Moreover, that country is so replenished with mines of coal, which are nothing else but bitumen petrified, that I may believe these waters pass through veins where coals are yet in their first principles, I mean before they be grown to a hardness, and from thence these waters borrow their quality. Besides some of these waters being distilled do show the same, for nothing whatsoever remains in the bottom of the lymbeck, but a little portion of salt with a certain black substance which clearly shows the smell, colour, and savour of bitumen. I cannot find any reason that they pass through veins of iron or vitriol. The taste denotes no such thing. I have mixed gall with them, which is accustomed to turn such waters to ink, but this hath not changed the colour of these. Out of these things it may be lawful to declare those waters to be bituminous and a little nitrous. From hence it is evident that they are of a hot temperament and abound with their spirits. Now, if it be safe to drink these waters they are good against ulcers in the neck of the bladder. If they be actually hot, they are good against all old pains in the joints arising from moist and cold causes, being used in manner of a bath. As they are, they are good to exsiccate all external ulcers."

The freedom of speech in the former of these letters reminds one of the French lady in Sterne's *Sentimental Journey*. Another group of letters deals with the smallpox and its treatment:—

"*Samuel Wildey to the King.*—1660, October 8, Rotterdam—The general report being here that his Highness the Duke of York is by God's Almighty hand visited with the small pox, I most humbly pray your Majesty that a drop of blood should not be drawn from the veines of his Royall Highness, being very dangerous in his condition and firstly cause the death. The long experience that I have in that sorte of sickness make me so bold to sent my advice to your Majesty."

"*The Same to the Same.*—(No date.)—Remedy for the small pox: Take new laid eggs, three yolkes and whites, fry them in fresh butter that was never salted, twelve ounces, till the eggs be very hard. Then pour the butter from the eggs into a basson full of fayre cold water. Let it stand till the butter be cold and caked, then take it off from the water and put it into a fayre vessell and beat it with a wooden spatter, continually adding three or four drops of damaske rose water, till the butter with beating come to be white. Then take of that unguent four ounces, add to it *saccarum* sugar-candy, *albi* two drams, finely pulverizated misse, *fyat electuarium.* Be sure to give of this three times a day, and so in the night the quantity of a nutmegg upon a knife point. Let it dissolve in his mouth and swallow it down—this by God's grace and assistance will cure the small pox in the throat which is the cause of most men's death in that disease. Then take the unguent without the candy and warme it in a saucer and anoynt the face and eyes with a feather morning and evening, and this preserves the eyes and keeps the face from pitting. . . *Probatum est.* Now if it please God that his Royall Highness the Duc of York cannot sleep, lett a live pidgeon be slitt in two, and one halfe be applyed so soone as it is splitt to the sole of one foot and the other halfe to the sole of the other foot, fast bound with rowlers and so remaine twenty-four houres, and by God help that will procure sleep and extract the venemous quality of the disease from the heart and vitall spirits."

Still another group deals with cancer of the breast:—

"*Margaret Lady FitzJames to her Sister, Lady Harley.*—1673, Aug. 1, Fairfield.—My sister is now in ease, and as cheerful as it can be expected. The wound in her breast is narrower than it was but very deep, to the very bone. The doctor fears it is incurable. She has been for four days before I came in extreme pain which was caused by Sir John Wroth's tricks, exciting his horse into a fury. . . The doctor says my sister may live some years, but if the humor should come to be sharpe, as it was once before, I fear her time will not be long. The doctor speaks of ten years."

"*Ann Palmer to her Sister, Lady Harley.*—1673, Aug. 2.—I have a great deall to say if I were with you but can't in a letter. My breast is broke as I beleve you have heard, and it eats away more and more, soe as the doctor tells me plainly that there is noe cure but by manuall operation, and that is soe dangerous and painfull as I thinck not to submit to it, for he saith the cancer is fixt, and, as he thinckes, the rib is fouled. Though it was the first as I heard speak of it yet to mee it was not strainge, because I thought it was soe afore. There are waters in this country which have cured a cancer in a woman's breast but it is not like mine; but being now in a desperate condition I am willing to try it as it is approved by the doctor to allay pain and keep the melancholy humor low. I was for a fortnight in great pain but now I am at ease."

◆

THE FUNCTION OF THE CORPUS STRIATUM.

THE knowledge of the function of the corpus striatum in the human brain has long been involved in considerable obscurity, since electric stimulation of this region fails to elicit definite motor response. Evidence of degeneration in the lenticular portion of this basal mass of grey matter may however be clinically evidenced by a syndrome of symptoms characterized by motor disturbance, spasm and tremor. In the issue of the *Lancet* for April 27, 1912 (p. 1115), Dr. S. A. K. Wilson described this lenticular syndrome at length. In a recent number of ***Brain*** (vol. xxxvi, p. 427), Dr. Wilson further records the results of experimental lesions of the corpus striatum and their significance. This latest research has been editorially reviewed in the *Lancet* in part as follows:—

"Electrical stimulation of the lenticular nucleus failed to induce any motor effect, thus confirming the results of most other observers. Electrolytic destruction, however, of definite portions of this nucleus was carried out on monkeys, which, after a period of three weeks, were destroyed, and the degenerated areas carefully examined. The results showed, in the first place, that the corpus striatum is independent of the cerebral cortex; it is also not connected directly with the spinal cord. Connections are more intimate, however, with the optic thalamus and regio subthalamica, including the red nucleus, and this fibre system links especially with the globus pallidus portion of the corpus striatum. It is clear that this body is an autonomous centre. Its function is exercised independently of the cerebral cortex but is motor in type, and is exercised in an efferent or caudal direction. Developmentally, it appears that in the lower forms of vertebrate life the corpus striatum exercises a more dominant motor control than it can exert in the higher forms, although such control cannot attain the complexity and range afforded by the elaboration at a later phase of the cortical brain or neopallium. The final function of the corpus striatum appears to be something of a 'steadying' influence upon pyramidal innervation exerted through the strio-rubro-spinal tract. How this effect is brought about is suggested to be by virtue of what Sherrington terms the 'final common path.' The idea conveyed by this definition is that an end neuron effect, of motor type for instance, depends for its manner of action upon the particular stimulus applied to its arborisations at its proximal end, which stimulus, however, may be of varying nature, and may also reach the end neuron along different converging channels. The type of final stimulus is itself determined by the coördinate relationships between the possible sources. Amongst such channels are recognized cortical and cerebellar influences, for example: in addition, the corpus striatum is claimed to be capable of exerting an effect. Clinically it is suggested that absence of striate control induces tremor, well exemplified in cases of progressive lenticular degeneration. One question remains to be answered: Why is it that in the experiments performed tremor did not result? The reason suggested is that possibly the wide variation in functional capacity of the lenticular nucleus in different species, a variation worthy, apparently, of particular comment, forbids the anticipation that results gained in experiments upon the ape need necessarily be identically reproduced in man."

It may be that, situated as it is in intimate relation to the internal capsule, the corpus striatum when undergoing degenerative processes would affect the function of the motor fibres in the capsule. Such processes would be likely to arise from arterial disease of the twigs from the anterior choroid artery supplying this region. Apparently the demonstrated functional activities of the corpus striatum are resident rather in its lenticular than in its caudate portion.

* * *

INVESTIGATION OF POLIOMYELITIS IN VERMONT.

IN the issue of the JOURNAL for Dec. 24, 1914, we noted the arrangements for a comprehensive study of poliomyelitis in Vermont by the State Board of Health in coöperation with Dr. Simon Flexner of New York and Dr. Robert W. Lovett of Boston. The following letter to the daily press from Dr. Charles S. Caverly, president of the Vermont Board of Health, states interestingly the progress and plans of this valuable piece of research:—

"In common with most of the Northern states, Vermont has suffered quite severely at times during the last 20 years from this disease. The first notable outbreak of the disease recorded in literature occurred in this state.

"We have during the last five years had two rather sharp outbreaks, and each outbreak of course leaves the usual number of cripples. It has become a very serious problem, and the medical profession throughout the country has been taking a very live interest in solving the problems presented by this disease. As is well known, these problems have received much attention at the Rockefeller Institute in New York, and at various other points, especially Boston, where Dr. Lovett himself has been prominently identified with the work.

"The state board of health of Vermont has recently been given a considerable sum of money by a loyal Vermonter, who has been observant of the disastrous effects of these epidemics of infantile paralysis. With this money, the board has undertaken three lines of work.

"First, it has been able to interest and secure the coöperation of Dr. Robert W. Lovett, of Boston, who has been to five points in the state to examine and recommend treatment for those who have been maimed by the disease. It would be difficult to overestimate the success so far of Dr. Lovett's work. He has succeeded in interesting physicians, nurses and parents, so that everywhere his suggestions, seconded by those of his assistant, Miss Wright, are being most carefully and persistently followed out. The detail of the work undertaken by the board seeks to minimize the effects of the disease.

"The second line of work undertaken by the board in this connection has been research work into the cause and methods of transmission of the disease. The board has been exceedingly fortunate in securing the help of Dr. Simon Flexner of the Rockefeller Institute in the work, and he has detailed Dr. H. L. Amoss, his assistant, to conduct the work in Vermont. The board has fitted up a laboratory in the College of Medicine at Burlington, which was placed at its disposal by the university authorities. With the aid of animal experimentation, it is hoped to throw some light upon the baffling problems presented by the epidemiology of this disease. Dr. B. H. Stone, the director of the laboratory, will have charge of this work in Dr. Amoss's absence from Vermont, and Dr. Towne, a young graduate, has been engaged to devote all his time to the details of the laboratory work.

"In the early summer it is planned to have meetings at various places in the state, to which physicians will be invited to listen to the best authorities available on the subject of the cause and prevention of infantile paralysis. This is the third detail of the campaign we are conducting.

"There were approximately 275 recognized cases of this disease in Vermont during the last summer. Fifteen per cent. of these were fatal. The disease has been at times quite prevalent throughout the Northern states, and it is not known that Vermont has suffered more than her neighbors.

"We have been keeping very close track of the cases and made a detailed study of the disease, as it has occurred in our state. The most careful preventive measures are being everywhere adopted, as it presents itself.

"CHARLES S. CAVERLY.
"President of the State Board of Health
"Rutland, Vt., Feb. 24."

◆

MEMORIAL OF DR. HENRY CUTLER BALDWIN.

The following memorial notice of the late Dr. Henry Cutler Baldwin recently appeared in a Boston daily paper:—

"Those who have been privileged to receive the ministrations of Dr. Henry Cutler Baldwin feel that in his death they have suffered an irreparable loss. He was a wonderful physician; he had an insight that gave him, as it were, a power of divination; he brought to all his immense knowledge and skill, to his observation and experience, an imagination that penetrated to the hidden all, controlled by a vigorous judgment. Some of the cures that he wrought were like miracles. His earnestness, his determination, his interest, his will, that sometimes seemed as if it would dominate fate, were all factors in his success. Those who have seen him bring the all but dead to useful life, make the dumb speak, find the concealed malignity that no one else suspected, build up sick nerves, control the insane, keep mania in check, could only feel that he was incarnate wisdom. But his personal characteristics were as valuable as his medical knowledge and skill. His gentleness, his willingness, his benignity, his courage, his power of inspiring confidence, were like an atmosphere. When he came in he brought sunshine with him, and care and apprehension vanished.

"From his youth he was of stainless purity and lofty ideals. In moments of relaxation there was a charming boyishness about him that was very engaging; he had a fine and delicate sense of humor; he enjoyed poetry and a good book; he was exceedingly fond of music, having a rich and pure tenor voice, and being one of the leading singers of the Cecilia Society. He had been round the world with a patient in the early years of his practice, and had visited Europe and the Pacific Coast many times afterwards. He had seen the best of art in Europe and Asia and the islands of the seas, and was really a connoisseur, although without pretensions. He was very fond of animals, devoted to his dogs, and a daring horseman.

"His home life was very beautiful, full of gentle courtesies and sweet appreciations, full of recognition of the cheer and comfort and sympathy he received. And for the rest, his charity was unbounded. There should be a host of grateful patients from whom he refused to take a penny to rise up and call him blessed. He died, at far too early an age, a victim to his absorption in his work for his fellow men, a martyr to his profession.

"HARRIET PRESCOTT SPOFFORD.
"March 5, 1915."

◆

Correspondence

AN OLDEN-TIME NUTRITION LABORATORY.

BOSTON, March 5, 1915.

Mr. Editor: The following is from the *Spectator*, contributed by Addison, and well describes the "Malade Imaginaire" of Molière.

"The following Letter will explain it self, and needs no Apology.

'*Sir*,

I am one of that sickly Tribe who are commonly known by the name of *Valetudinarians;* and do confess to you that I first contracted this ill Habit of Body, or rather of Mind, by the Study of Physick. I no sooner began to peruse Books of this Nature, but I found my Pulse was irregular, and scarce ever read the Account of any Disease that I did not fancy my self afflicted with. Doctor *Sydenham's* learned Treatise of Fevers threw me into a lingering Hectick, which hung upon me all the while I was reading that excellent Piece. I then applied my self to the Study of several Authors, who have written upon Phthisical Distempers, and by that means fell into a Consumption; till at length, growing very fat, I was in a manner shamed out of that Imagination. Not long after this I found in my self all the Symptoms of the Gout, except Pain; but was cured of it by a Treatise upon the Gravel, written by a very ingenious Author, who (as it is usual for Physicians to convert one Distemper into another) eased me of the Gout by giving me the Stone. I at length studied my self into a Complication of Distempers; but, accidentally taking into my Hand that Ingenious Discourse written by *Sanctorius*, I was resolved to direct my self by a

Scheme of Rules, which I had collected from his Observations. The Learned World are very well acquainted with that Gentleman's Invention; who, for the better carrying on of his Experiments, contrived a certain Mathematical Chair, which was so Artificially hung upon Springs, that it would weight any thing as well as a Pair of Scales. By this means he discovered how many Ounces of his Food pass'd by Perspiration, what quantity of it was turned into Nourishment, and how much went away by the other Channels and Distributions of Nature.

"Having provided my self with this Chair, I used to Study, Eat, Drink, and Sleep in it; insomuch that I may be said, for these three last Years, to have lived in a Pair of Scales. I compute myself, when I am in full Health, to be precisely Two hundred Weight, falling short of it about a Pound after a Day's Fast, and exceeding it as much after a very full Meal; so that it is my continual Employment to trim the Ballance between these two Volatile Pounds in my Constitution. In my ordinary Meals I fetch my self up to Two hundred Weight and a half Pound; and if after having dined I find my self fall short of it, I drink just so much Small Beer, or eat such a quantity of Bread, as is sufficient to make me weight. In my greatest Excesses I do not transgress more than the other half Pound; which, for my Health's sake, I do the first Monday in every Month. As soon as I find my self duly poised after Dinner, I walk till I have perspired five Ounces and four Scruples; and when I discover, by my Chair, that I am so far reduced, I fall to my Books, and study away three Ounces more. As for the remaining Parts of the Pound, I keep no accompt of them. I do not dine and sup by the Clock, but by my Chair; for when that informs me my Pound of Food is exhausted I conclude my self to be hungry, and lay in another with all Dilligence. In my Days of Abstinence I love a Pound and an half, and on solemn Fasts am two Pound lighter than on other Days in the year.

"I allow my self, one Night with another, a Quarter of a Pound of Sleep within a few Grains more or less; and if upon my rising I find that I have not consumed my whole quantity, I take out the rest in my Chair. Upon an exact Calculation of what I expended and received the last Year, which I always register in a Book, I find the Medium to be Two hundred Weight, so that I cannot discover that I am impaired one Ounce in my Health during a whole Twelve-month. And yet, Sir, notwithstanding this my great Care to ballast my self equally every Day, and to keep my Body in its proper Poise, so it is that I find myself in a sick and languishing Condition. My Complexion is grown very sallow, my Pulse low, and my Body Hydropical. Let me therefore beg you, Sir, to consider me as your Patient, and to give me more certain Rules to walk by than those I have already observed, and you will very much oblige

"Your Humble Servant!"

Possibly the unfortunate plight of the gentleman so graphically described by Addison has a lesson for modern times, so that, when calculating calories for our patients, we must not lose sight of the *psychic* element and its influence on metabolism.

Yours truly,
Wm. Pearce Coues, M.D.

QUESTIONS ABOUT THE HARRISON LAW.

Campello, Mass., March 4, 1915.

Mr. Editor: I have noted your several explanations of the Harrison Bill. There are still at least two points not clear to me, viz.: If a physician "personally attends" a patient with severe "gall-stone colic" and administers a dose of morphia hypodermatically and feels the patient may need more morphia before morning or before he can again visit him, would the contingent dose or doses be included under the clause "personally attends"?

Again, many of us have long been in the practice of personally dispensing compound cough tablets containing codein heroin, etc. The Harrison bill does not mention such contingency. Will you kindly enlighten me as to what are my privileges in such cases and greatly oblige,

Yours very truly,
J. H. Averill, M.D.

[Note.—We have answered these questions in the leading editorial of this issue of the Journal.—Ed.]

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession for the Week Ending March 6, 1915.

CONTRIBUTIONS.

Dr. Grace Wolcott, Boston, Mass.	$ 10.00
Dr. Harold E. Perry, New Bedford, Mass.	10.00
Pittsburg College of Physicians, Pittsburg, Pa.	45.00
Dr. Daniel R. Robert, Brooklyn, N. Y.	5.00
Mrs. Charles E. Paddock, Chicago, Ill.	5.00
Dr. Chas. S. Wright, Acting Asst. Surg., U. S. A., Portland, Me.	5.00
Dr. E. C. S. Taliaferro, Norfolk, Va.	30.00
Dr. William H. Wilder, Chicago, Ill.	25.00
The Thunder Bay Medical Soc., Ontario, Can.	25.00
Garland Co. Hot Springs Medical Society, Hot Springs, Ark.	25.00
Dr. J. Shelton Horsley, Richmond, Va.	5.00
Dr. E. F. Dodds, Mossoula, Mont.	5.00
Dr. George R. Little, Wichita, Kansas	25.00
Dr. James A. Jackson, Madison, Wis.	5.00

Receipts for week ending March 6		$ 225.00
Previously reported receipts		4386.50
Total receipts		$4611.50
Previously reported disbursements:		
1625 standard boxes of food @ $2.20	$3575.00	
352 standard boxes of food @ $2.30	809.60	
	$4384.60	
Disbursements week ending March 6:		
100 boxes of food @ $2.30 per box	230.00	
Total disbursements		$4614.60
Deficit		$3.10

F. F. Simpson, M.D., *Treasurer*,
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

All interested in the welfare of those remaining in desolated Belgium have felt serious concern on account of the more recent diplomatic notes issued by the belligerent countries and the disquieting inferences drawn from them. From about the first of December until the present time, all the warring nations have given the American Commission for Relief in Belgium the sole right to carry supplies for civilian citizens into Belgium and have strictly respected the flag of the Commission both at sea and on land. Such assurances still exist but the restrictions rendered necessary by the urgent requirements of drastic war measures greatly increase the difficulties of transporting supplies to Rotterdam and thence to the ultimate ramifications in Belgium.

The practical significance of all this is:

First. The English government has withdrawn its monthly contribution of seven million dollars for the relief of civilian Belgians.

Second. The difficulties of transporting food from England to Rotterdam may be expected materially to reduce the shipment of supplies from individuals and charitable organizations in England to Belgium.

Third. The need for redoubled efforts on the part of Americans is correspondingly more urgent.

The following communications which appeared in the New York *Times* and other papers throughout the country March 3 and 4 are interesting and significant:

"London, March 2.—Walter Hines Page, the American Ambassador, today addressed a letter to Herbert C. Hoover, chairman of the American Commission for Relief in Belgium, explaining the diplomatic conditions under which the Commission must work.

"First. All foodstuffs must be the absolute property of the Commission for Relief in Belgium.

"Second. Foodstuffs must become the property of the Commission at the port of departure. In no other way can safety of delivery to Belgium be secured.

"Third. Foodstuffs must be transported in ships under the control of the Commission because these are the only ships whose safety the belligerent governments guarantee.

"Fourth. The distribution in Belgium must be carried out absolutely under the control of the Commission, because supplies cannot reach the people through any other channel and because the governmental guarantees hold only with reference to food belonging to the Commission."

"New York, March 3.—Mr. Linden W. Bates, Vice-Chairman of the Commission for Relief in Belgium, who is the directing head of the Commission's work in this country, at his office, 71 Broadway, was asked yesterday if he had any comment to make on the latest move with reference to the transportation end of the Commission's work. Mr. Bates made this statement:

"'In connection with the reports that relief work in Belgium may be hampered by the channel and North Sea situation, it can only be said that the work for relief must go on, and we expect surely to continue to get food into Belgium. In response to inquiries made today from the State of Kentucky and elsewhere as to whether the Commission would continue to receive or buy food, I answered that it would.'"

The American Commission for relief in Belgium is undertaking to deliver the supplies we furnish without cost to our Committee.

Of course, it is conceivable that some of the vessels carrying supplies for the American Commission for Relief in Belgium might strike mines or might otherwise be interfered with, but that in no wise diminishes the urgent need for persistent effort to supply the necessities of life for the destitute civilians of Belgium. The greater difficulties confronting us must be met with renewed energy and increased effort.

SOCIETY NOTICE.

New England Pediatric Society.—The thirty-seventh meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, March 26, 1915, at 8.15 p.m.

The following papers will be read:

1. "The Management of Breast Feeding with Case Reports," Dr. C. K. Johnson, Burlington, Vt.
2. "Air and Water as Curative Agents," Dr. Roland G. Freeman, New York City.

Light refreshments will be served after the meeting.

E. M. Buckingham, M.D., *Pres.*
Richard M. Smith, M.D., *Sec.*

APPOINTMENT.

Dr. Edward W. Barrett of Medford, Mass., has been appointed city physician of that community. He is a member of the American Medical Association, The Massachusetts Medical Society and the Medford Medical Society.

RECENT DEATHS.

Dr. John P. Dennett, who died of heart disease on March 3 at Arlington, Mass., was born in Barnstead, N. H., in 1840. After studying dentistry at the Baltimore Medical College, he settled in the practise of his profession at Gloucester, Mass., from 1867 to 1887. In 1888 he removed to Boston where he continued in practise until his retirement in 1903. He is survived by his widow and by three daughters.

Dr. Albert Simon Newcomb, who died of heart disease recently at Schenectady, N. Y., obtained the degree of M.D. from the Albany Medical College in 1866. During the Civil War he served for a time as surgeon of the 24th New York Regiment and was subsequently medical examiner for various life insurance companies. He retired in 1903. He is survived by his widow.

Dr. Thomas Henry Maguire, who died of pneumonia on March 4 at Dorchester, Mass., was born in South Boston in 1878. After graduating from the Boston Latin School he studied medicine at the Harvard Medical School from which he received the degree of M.D. in 1900. After serving as a house officer at the Carney Hospital he settled in the practise of his profession at Dorchester. He was a member of the American Medical Association, The Massachusetts Medical Society, the Harvard Medical and Carney Hospital Alumni Associations. He is survived by his widow and by one daughter.

Dr. Omar Alpha Flint, a retired Fellow of The Massachusetts Medical Society, died at his home in Dracut Center, February 16, aged 71 years. He was a graduate of the University of Vermont College of Medicine in 1885. He was at one time superintendent of the Westford Reformatory and also superintendent of schools at Billerica.

Dr. Alfred Mason Amadon, formerly of Boston, died at Saranac Lake, N. Y., March 6, aged 48 years. Dr. Amadon was a graduate of the Dartmouth Medical School in 1897 and became a Fellow of The Massachusetts Medical Society in the same year. He had been in poor health for several years.

BOOKS AND PAMPHLETS RECEIVED.

President's Address delivered at the Seventieth Annual Meeting of the American Medico-Psychological Association. Carlos F. MacDonald, M.D. Reprint.

Immunological Relations of a Chicken Sarcoma, by William H. Woglom, M.D. Reprint.

The Commoner Diseases, Their Causes and Effects, by Dr. Leonhard Jores. J. B. Lippincott Company.

Nursing and Care of the Nervous and the Insane, by Charles K. Mills, M.D. J. B. Lippincott Company.

The Newer Physiology in Surgical and General Practice, by A. Rendle Short. William Wood & Co.

Physiological Principles in Treatment, by W. Langdon Brown, M.D. William Wood & Co.

Practical Sanitary Science, by David Sommerville, M.D. William Wood & Co. 1915.

Medical Electricity, Röntgen Rays and Radium, by Sinclair Tousey, M.D. W. B. Saunders Co. 1915.

Carcinosarcoma in the Mouse, by William H. Woglom, M.D. Reprint.

Primary Tumors of the Bladder in Children. Report of a Case of a Fibrous Polypus, by Emil C. Robitshek, M.D. Reprint.

Gall-Stone Recurrences; A Review of the Literature, by Emil C. Robitshek, M.D. Reprint.

Mortality Statistics, 1913. Washington, D. C.

NEW WORK JUST READY

DISEASES OF THE
Bronchi, Lungs and Pleura

By FREDERICK T. LORD, M.D.
Instructor in Clinical Medicine, Harvard Medical School; Visiting Physician, Massachusetts General Hospital; Visiting Physician, Channing Home for Consumptives, Boston

Octavo, 606 pages, with 93 engravings and 3 colored plates. Cloth, $5.00 net.

Dr. Lord has created a thoroughly practical treatise on diseases of the respiratory organs. Current knowledge, gained from a large hospital experience and an extensive study of the literature, is presented in these pages in such form as to be of value to students and practitioners, and to provide a basis for further study or research. A number of the sections are of great interest, notably those on bronchostenosis, pulmonary abscess and gangrene, x-ray examination and radioscopic findings. Special attention has been devoted to pulmonary conditions which simulate tuberculosis and their differential diagnosis. The discussion of pneumonia, which includes immunity, metabolism, preventive inoculation and special methods of treatment (including that by immune sera) is of unusual merit. Throughout the book the pathology of the various pulmonary diseases is discussed in detail, and its bearing on diagnosis and treatment is strongly emphasized.

PHILADELPHIA
706-8-10 Sansom Street

LEA & FEBIGER

NEW YORK
2 W. Forty-Fifth Street

NEW YORK UNIVERSITY MEDICAL DEPARTMENT
The University and Bellevue Hospital Medical College, Session 1914-15

The session began on Wednesday, September 23, 1914, and continues for eight months.

Attendance upon four courses of lectures is required for graduation.

The entrance requirements are as follows: (1) The Medical Student Certificate issued by the New York State Education Department upon the completion of a four-year high school course. (2) One year's work of college standard, which year must include instruction in Chemistry, Physics, and Biology. This year must be in addition to the high school course.

Students who have attended one or more regular courses at other accredited Medical Colleges are admitted to advanced standing on presentation of credentials meeting the requirements of the class to which they seek admission, and upon examinations on the subjects embraced in the curriculum of this college.

For the annual circular giving full details, address DR. SAMUEL A. BROWN, *Corresponding Secretary,* 26th Street and First Avenue, New York City

---

Fisk & Arnold
Established 1865
Oldest Manufacturers in New England of
ARTIFICIAL LIMBS

For Every Amputation.

United States Government Bonded Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates an arm for amputation above elbow with spring thumb, detachable hand and elbow locking device.

Full descriptive catalogue on application.

3 Boylston Place, Boston, Mass.
Telephone, Oxford 3684-M.

INDEX TO ADVERTISEMENTS

Agar Agar............Mansfield Laboratories vii
American Engraving Co.................... xviii
Automatic Appliance Co.................... xviii
Aseptic Service Co.................... xx

Benger's Food.................... iii
Boston Hygienic Corset Co.................... ii
Boston Laboratories.................... xv

Fisk & Arnold..............Artificial Limbs xix
Fougera & Co.................... viii
French Lick Springs............Pluto Water iv

Godfrey, Robert C.................... xviii

Harvard Dental School.................... xv
Harvard Medical School.................... xv
H.-O. Oatmeal.................... viii

Journals Bound.................... xix

King's Puremalt.................... v
Knoll & Co....................Digipuratum xiii

Lea & Febiger....................Publishers xix

Macullar Parker Co................Clothing xiv
Mahady, E. F. Co.................... ii
Massachusetts General Hospital.................... xii
Medical School of Maine.................... xiii
Mellin's Food.................... xii
Motor Car Service Co.................... xviii

Natural Line Corsets.................... xix
New York Eye and Ear Infirmary.................... xiii
New York Polyclinic Medical School.................... xv
New York University.................... xix
Nurses' Directory.................... x

Patch, E. L. Co.................... xi
Pomeroy vi
Professional Cards................xvi and xvii

Quaker Oats.................... xi, xvii

Radium Chemical Co.................... ix

Saunders, W. B. Co................Publishers i
Schering & Glatz....................Medinal ix
Sharp and Dohme.................... v
Sherman's Bacterins.................... iv
Syracuse University.................... xv

Tufts College Medical School.................... xv

Warren Chambers.................... xviii
Whiting's Milk.................... xii

If you want
To See
A BELLYBAND
That unites with it
A CORSET
That cannot
WORK UP
That can be worn for
ENTEROPTOSIS
Hernia, floating kidney and relief of female disturbances from pressure,
Call Oxford 3160
and let MRS. STOCKWELL, Mgr.,
THE NATURAL LINE CORSET COMPANY
demonstrate it to you.

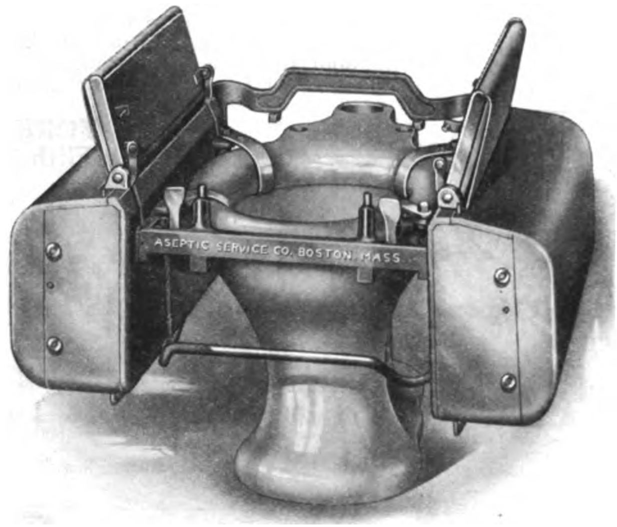
In the Interest of Public Health

we present our

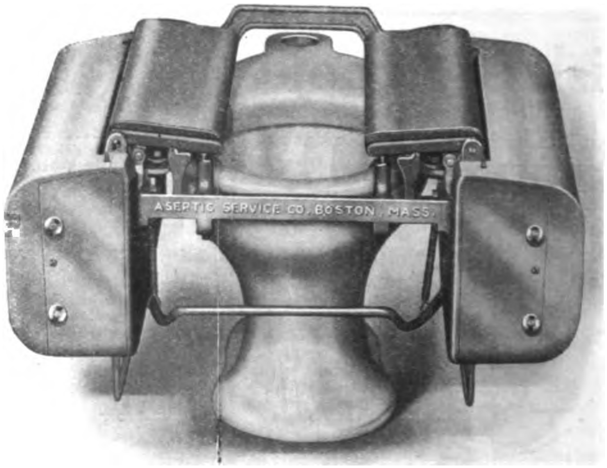
INDIVIDUAL AUTOMATIC

PAPER-COVERED TOILET SEAT

of vital importance in promoting cleanliness



A seat pivoted over the closet and protected in a novel manner when not in use.



By pressing a treadle with the foot, the seat is brought into usable position whenever needed, covered with fresh, clean paper for each individual. After using, the seat returns automatically to the first position.

It is impossible for the body of the user to come in contact with anything touched by a previous user. The hand is never in contact with any part of the mechanism. Write for literature, or call in person to

SEE THE SEAT OF SAFETY

ASEPTIC SERVICE COMPANY, 161 SUMMER STREET BOSTON

Jamaica Printing Company, Jamaica Plain, Boston, Mass.

THE BOSTON
Medical and Surgical
JOURNAL
THE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

Vol. CLXXII
No. 11

SUPPLEMENT

Single Copies 15 Cents
Five Dollars per Annum

MAR 18 1915

DIRECTORY

OF THE

OFFICERS AND FELLOWS

Alphabetical and Local Lists

Prepared by the Librarian

A.D. 1781

Massachusetts Medical Society
8 The Fenway
Boston, Massachusetts

SUPPLEMENTARY

INFORMATION RECEIVED SINCE FINAL REVISION.

Albert Lionel Louis	From Boston to Central Falls, R. I., 518 Mill St.
Amadon, Alfred Mason	Died, March 6, 1915.
Baker, Chester Monroe	Died, December 12, 1914.
Baldwin, Henry Cutler	Died, February 25, 1915.
Cary, Foster Harrington	Absent, address mail to Worcester, 47 West St.
Chandler, Luther Graves	Died, March 1, 1915.
Cockett, Marguerite Standish	From New York City to Bryn Mawr, Pa., Pembroke and Guelph Rds.
Coon, William Hall	Haverhill, 112 Emerson St. Re-admitted.
Dixon, Arthur	From Boston to Roxbury, 394 Riverway.
Flint, Omar Alpha	Died, February 16, 1915.
Haley, William Thomas	Boston, City Hospital.
Haven, Henry Cecil	Died, February 19, 1915.
Hayden, David Hyslop	Died, February 21, 1915.
Hipkiss, George	From Boston to Medford, 244 Salem St.
Mysel, Philip	From Dorchester to Roxbury, 385 Warren St.
Reed, Lucy Carleon	Southbridge; change to: Waite, Lucy Reed.
Scannell, James Joseph	Died, February 19, 1915.
Swan, Charles Walter	From Lowell to Brandford, Conn., 119 Elm St.
Torrey, John Paine	From Andover to Norman, Oklahoma.
Wallace, Asahel Parker	From Medford to Bethlehem, N. H.
Watts, Joseph Palmer	Died, February 18, 1915.

Massachusetts Medical Society

ALPHABETICAL DIRECTORY

OF THE

OFFICERS AND FELLOWS

WITH

DATE OF ADMISSION, RESIDENCE
AND OFFICE ADDRESS

JANUARY 1, 1915

OFFICERS OF THE SOCIETY

1914-1915

PRESIDENT

CHARLES F. WITHINGTON . . 35 Bay State Road, Boston

VICE-PRESIDENT

SAMUEL B. WOODWARD . . . 58 Pearl Street, Worcester

SECRETARY

WALTER L. BURRAGE . . . 282 Newbury Street, Boston

TREASURER

EDWARD M. BUCKINGHAM 342 Marlborough Street, Boston

LIBRARIAN

EDWIN H. BRIGHAM, Brookline, office 8 The Fenway, Boston

HONORARY FELLOWS

1892 Goodale, George Lincoln, 5 Berkeley St., Cambridge, Mass.

HARVARD COLLEGE LIBRARY MAY 13 1915 CAMBRIDGE

ACTIVE AND RETIRED FELLOWS

JANUARY 1, 1915

NOTE.—The date preceding the name is that of admission. A date following, preceded by a †, denotes year of retirement. The first name of city or town is the legal residence; the street and number are the office address.

A letter in place of a given name not followed by a period is not an initial. It is a letter adopted by the individual instead of a name to distinguish him or her from others, or for the sake of euphony.

A

1884 Abbe, Alanson Joseph......Fall River. 375 Rock St.
1910 Abbe, Elizabeth Morrison..Roxbury (Boston). 47 Pilgrim Road.
1895 Abbe, Frederick Randolph..Dorchester (Boston). 15 Sayward St.
1911 Abbot, Charles Edward....Andover. 70 Main St.
1892 Abbot, Edward Stanley....Waverley (Belmont). McLean Hospital.
1903 Abbot, Florence Hale......Newton. 419 Waverley Av.
1913 Abbott, Charles Roger......Clinton. 123 High St.
1894 Abbott, Howard Edwin....Lynn. 54 Park St.
1880 Abbott, Stephen Wendell...Lawrence. 103 Summer St. †1915
1891 Achorn, John Warren......Pine Bluff, N. C.
1911 Achorn, Ralph Chase......Boston. 673 Boylston St.
1909 Adamian, Parnag Adam....Worcester. 55 Laurel St.
1911 Adams, Charles Baker.....Springfield. 431 Main St.
1894 Adams, Charles Sumner...Wollaston (Quincy). 62 Brooks St.
1906 Adams, Charles Waldron...Cambridge. 322 Broadway.
1887 Adams, Edwin Boardman..Springfield. 423 Main St.
1880 Adams, George Edwin.....Worcester. 974 Main St.
1884 Adams, Herbert William...Dorchester (Boston). 744 Dudley St.
1898 Adams, John..............Roxbury (Boston). 1637 Tremont St.
1903 Adams, John Dresser......Boston. 261 Beacon St.
1873 Adams, John Quincy.......Amesbury. 106 Main St.
1910 Adams, Letitia Douglas....Winthrop. 139 Cliff Av.
1891 Adams, Walter Henry......Northampton. 34 Bridge St.
1899 Adams, William Carlton...East Taunton (Taunton). 168 Middleboro St.
1904 Adams, Zabdiel Boylston...Brookline. Office, Boston. 166 Newbury St.
1912 Addelson, Nathan..........Roxbury (Boston). 548 Warren St.
1907 Adler, Herman Morris.....Roxbury (Boston). 74 Fenwood Rd.
1910 Adriance, Vanderpoel......Williamstown. Main St.
1867 Ahearne, Cornelius Augustus †1906 Lynn. 21 Church St.
1891 Ahearne, Cornelius Augustus, Jr. Salem. 83 Essex St.
1894 Albee, George Macdonald...Worcester. 1159 Main St.
1913 Albert, Lionel Louis........Address unknown.
1903 Alexander, Thomas Branch Scituate Harbor (Scituate). Central St.
1900 Alfred, James.............Brockton. 591 North Main St.
1913 Allard, Carlton Eugene....Boston. 419 Boylston St.
1913 Allen, Arnold Noble.......Roslindale (Boston). 22 Conway St.
1884 1906 } Allen, Bradford..........Nashua, N. H. 9 Main St.
1892 Allen, Carl Addison........Holyoke. 16 Fairfield Av.
1899 Allen, Clarence Jean........Winchester. 33 Church St.
1909 Allen, Fred Harold.........Holyoke. 644 Dwight St.
1901 Allen, Freeman............Boston. 200 Beacon St.
1885 Allen, Gardner Weld.......Boston. 419 Boylston St.
1913 Allen, George Edgar.......Boston. Relief Station. Haymarket Sq.
1903 Allen, Granville Stevens....Lawrence. 3 State St.
1901 Allen, Horatio Cushing.....New Bedford. 11 Eighth St.
1898 Allen, Seabury Wells......York Harbor, Me. Office, Boston. 509 Beacon St.
1903 Allen, William Howard....Mansfield. 70 N. Main St.
1911 Alling, Marshall Louis.....Lowell. 9 Central St.
1914 Allison, Carl Edwin........Somerville. 241 Elm St.
1911 Almy, Thomas.............Fall River. 140 Rock St.
1897 Amadon, Alfred Mason.....Boston. 543 Boylston St.
1893 Amadon, Arthur Frank....Boston. 543 Boylston St.
1890 Ames, John Lincoln........Boston. 87 Chestnut St.
1898 Andrews, Anna Judkins....Boston. 30 Huntington Av.
1914 Andrews, Benjamin Franklin Worcester. City Hospital.
1897 Andrews, Edward Austin..Newton Center (Newton). 14 Institution Av.
1907 Andrews, Frederick Francis.Revere. 94 Beach St.
1899 Andrews, Harold Virgil....Boston. 1083 Boylston St.
1904 Andrews, Robert Eaton....Cambridge. 4 Brattle St.
1888 Anthony, Francis Wayland.Bradford (Haverhill). Office, Haverhill. 50 Merrimack St.
1910 Anthony, George Chenery..Wellesley. Denton Road—West.
1898 Anthony, Jeremiah Christopher Springfield. 150 Chestnut St.
1874 Appleton, William.........Boston. 74 Beacon St.
1912 Archambault, Lionel Maximillian Haverhill. 94 Emerson St.
1906 Arkin, Louis...............Boston. 366 Commonwealth Av.
1891 Arnold, Horace David......Boston. 520 Commonwealth Av.
1905 Ascher, Joseph............Roxbury (Boston). Office, Boston. 344 Hanover St.
1912 Ash, James Earle..........Winchester, Office, Roxbury (Boston). 240 Longwood Av.
1895 Ash, John Henry..........West Quincy (Quincy). 237 Copeland St.
1908 Atchison, Charles Moran...New Bedford. 94 Fourth St.
1894 Atkinson, Lizzie Daniel Rose West Newton (Newton). 1720 Washington St.
1905 Atwater, James Billings....Westfield. 108 Elm St.
1904 Atwood, Abel Wilson......Worcester. 744 Main St.
1883 Atwood, Charles Augustus.Taunton. 15 West Britannia St.
1900 Atwood, Charles Fenner....Arlington. 821 Mass. Av.
1881 Atwood, Frank Sumner....Salem. 125 Federal St.
1892 Atwood, George Manley....Bradford (Haverhill). 127 Main St.
1894 Auger, Louis Lemaitre......Worcester. 104 Franklin St.
1891 August, Albert.............Cambridge. 51 Brattle St.
1887 1912 } Austin, Arthur Everett....Boston. 110 Marlboro' St.
1903 Averell, Charles Wilson....North Reading.
1896 Averill, George Goodwin...Waterville, Me. 47 Redington, St.
1882 Averill, Jesse Howes.......Campello (Brockton). 1148 Main St.
1910 Ayer, James Bourne.......Boston. 518 Beacon St.
1884 Ayer, Silas Hibbard........Boston. 318 Shawmut Av.
1896 Ayer, Thomas Herbert.....Westborough. 50 West Main St.
1914 Ayers, Charles Eaton......South Boston (Boston). Carney Hospital.
1914 Ayres, Harold Winslow....West Somerville (Somerville). 403 Highland Av.

B

1878 Bacon, Jonas Edward.....Brockton. 101 Main St.
1900 Bacon, Newton Samuel.....Cambridge. 1688 Mass. Av.

1899 Bacon, Theodore Spaulding. Springfield. 67 Maple St.
1899 Badger, George Sherwin Clarke Boston. 48 Hereford St.
1908 Baff, Max................ Worcester 141 East Central St.
1913 Bagg, Edward Parsons, Jr.. Holyoke. 243 Linden St.
1904 Bail, John Warren......... Brookline. 1695 Beacon St.
1881 Bailey, Charles Hardy..... Gardner 39 East Broadway.
1905 Bailey, Frederick James... Dorchester (Boston). 344 Bowdoin St.
1893 Bailey, George Guy........ Ipswich. Market St.
1894. Bailey, Marshall Henry.... Cambridge. 1569 Mass. Av.
1898 Bailey, Walter Channing... Boston. 506 Beacon St.
1906 Bain, John Baxter......... Lawrence. 348 Haverhill St.
1896 Baker, Chester Monroe..... Hyannis (Barnstable). Main St.
1910 Baker, Chester Stoyle..... Lowell. 40 Middlesex St.
1883 Baker, David Erastus...... Newtonville (Newton). 227 Walnut St.
1914 Baker, Donald Vinton..... Boston. 49 Gloucester St.
1892 Baker, Frederick Herbert.. Worcester. 4 Linden St.
1914 Baker, Harold Woods...... Boston. 49 Gloucester St.
1882 Baker, Harry Beecher..... Dighton. Office, Taunton. 59 Main St.
1910 Baker, Leonard Allen...... State Farm (Bridgewater).
1899 Baker, Lewis Forrester.... Fitchburg. 454 Main St.
1903 Baker, Osmyn.............. Address unknown.
1903 Baketel, Roy Vincent...... Methuen. Odd Fellows' Bldg.
1906 Balboni, Gerardo Monari... Boston. 9 Prince St.
1891 Balch, Franklin Greene.... Boston. 279 Clarendon St.
1892 Balcom, George Franklin †1911 Swanzey, N. H. 39 Main St.
1911 Balcom, Kenneth Ira...... Worcester 112 Lincoln St.
1914 Baldwin, Edith Elizabeth.. Springfield. 50 Buckingham St.
1888 Baldwin, Frederick William Danvers. 25 Conant St.
1885 Baldwin, Henry Cutler..... Boston. 126 Commonwealth Av.
1895 Baldwin, Herman Trost.... Chestnut Hill (Newton). 96 Middlesex Rd.
1896 Baldwin, Sanford Oscar.... Framingham. 11 Union Av.
1912 Ball, Arthur Nelson....... Northampton. State Hospital.
1907 Ballou, Ambrose Roche.... Dorchester (Boston). 327 Neponset Av.
1901 Balmer, William Edward.. Whitinsville (Northbridge). Cottage St.
1886 Bancroft, Edward Erastus. Wellesley. 604 Washington St.
1891 Bancroft, George Andrew.. Natick. 33 West Central St.
1877 Bancroft, Winfred Baxter.. South Boston (Boston). 597 Broadway.
1898 Bangs, Charles Howard.... Lynn. Office, Boston. 149 Tremont St.
1906 Bannon, John Hugh....... Lawrence. 457 Essex St.
1905 Bardwell, Frederick Albert.. Roxbury (Boston). 2 St. James St.
1908 Barker, Williston Wright.. Dorchester (Boston). 4 Lyndhurst St.
1892 Barnes, Francis John...... Cambridge. 67 Brattle St.
1899 Barnes, Harry Aldrich..... Brookline. Office, Boston. 205 Beacon St.
1872 Barnes, Henry Jabez †1913 Northborough. Office, Boston. 429 Beacon St
1900 Barnes, James Arthur...... Worcester. 390 Main St.
1906 Barnes, William Lester.... Lexington. 362 Mass. Av.
1905 Barney, James Dellinger... Boston. 374 Marlboro' St.
1914 Barney, Willis Oliver...... Boston. 360 Commonwealth Av.
1910 Barnum, Francis Goodell... Hyde Park (Boston). 16 Maple St.
1913 Barone, Joseph............ Boston. 282 Hanover St.
1895 Barré, Joseph Aladin...... Fall River. 1555 Pleasant St.
1900 Barrell, Charles Sewall.... Boston. 425 Beacon St.
1899 Barrell, Mary Elizabeth... Worcester. 904 Main St.
1907 Barrett, Edward William.. Medford. 34 Washington St.
1904 Barrett, Michael Francis... Brockton. 231 Main St.
1913 Barrier, Emile August..... Boston, 702 Tremont St.
1906 Barron, Elmer Walter..... Malden. Office, Boston. 374 Marlboro' St.
1908 Barrows, Sterling.......... Amherst. 21 Pleasant St.
1901 Barry, Emmett William.... Whitinsville (Northbridge).
1908 Barry, James Henry....... Roxbury (Boston). 2990 Washington St.
1906 Barstow, Andrew Thaddeus. Boston. 27½ Mass. Av.
1899 Bartlett, Charles Watson... Marshfield. Main St.
1909 Bartlett, Fred Ai.......... Atlantic (Quincy). 62 Billings Rd.
1895 Bartlett, Oliver Leslie..... Pittsfield. 73 North St.
1902 Bartlett, Philip Challis.... Newton Highlands (Newton). Office, Boston. 583 Beacon St.
1905 Bartlett, Walter Oscar..... Roxbury (Boston). Office, Boston. 390 Commonwealth Av.
1903 Bartley, John Joseph...... Lawrence. 334 Haverhill St.
1906 Bartol, Edward Francis Washburn Milton. 6 Reedsdale Rd.
1890 Bartol, John Washburn.... Boston. 3 Chestnut St.
1871 Barton, Chester Manley †1906 Hatfield.
1900 Barton, John Alfred....... Fitchburg. 43 Summer St.
1869 Bassett, Elton James †1910 Taunton. 11 Cedar St.
1911 Batchelder, Hollis Goodell. Dedham. Office, Boston. 520 Beacon St.
1897 Batchelder, William Burdett Dorchester (Boston). 163 Washington St.
1895 Bateman, Frank Eliot...... Somerville. 163 Highland Av.
1889 Bates, Everett Alanson..... Springfield. 57 Chestnut St.
1907 Bates, Lewis Beals......... Ancon, Canal Zone, Panama, Ancon Hospital.
1897 Bates, Walter Simpson..... Barre. South St.
1879 Battershall, Joseph Ward.. Attleborough. 18 North Main St.
1911 Battershall, Mary Hannah Wolfenden Attleborough. 18 North Main St.
1912 Bauer, Louis Hopewell..... U. S. Army.
1912 Baum, Ewald George...... Natick. 17 West Central St.
1914 Baxter, Clarence Pennell... Topsfield.
1884 Baxter, Edward Hooker.... Hyde Park (Boston). 19 Webster St.
1903 Beal, Howard Walter...... Worcester. 452 Main St.
1913 Beale, Samuel Marsden, Jr.. Sandwich.
1897 Beals, Arthur Loring...... Brockton. 106 Main St.
1912 Bean, Charles Franklin Kingsbury West Medford (Medford). 51 Harvard Av.
1896 Bean, Charles Pierce....... Boston. 426 Mass. Av.
1913 Beardsley, William Henry.. Springfield. 84 Maple St.
1906 Beauchamp, Joseph Octave. Chicopee Falls (Chicopee). Office, Springfield. 310 State St.
1908 Beaulieu, Elmer Joseph.... Whitman. Washington St.
1906 Beaulieu, Francis Xavier... Taunton. 121 Bay St.
1899 Beckley, Chester Charles... Lancaster.
1890 Bedard, Joseph Armand.... Lynn. 26 Ocean St.
1901 Beebe, Theodore Chapin.... Boston. 416 Marlboro' St.
1901 Beede, M Josephine....... Roslindale (Boston). 10 Conway St.
1907 Beeley, Leon Gage......... Lawrence. 145 Haverhill St.
1914 Behrman, Roland Augustus. Mattapan (Boston). 249 River St.
1914 Bell, Clarence John........ Wellfleet.
1914 Bell, Conrad................ Waltham, 820 Main St.
1914 Bell, Richard Dana........ Somerville. 26 Bow St.
1876 Bell, William Appleton.... Somerville. 26 Bow St.
1906 Bellehumeur, David Stanislaus Lowell. 813 Merrimack St.
1873 Bemis, Charles Albert †1909 West Medway (Medway).
1893 Bemis, John Merrick....... Worcester. 223 Salisbury St.
1875 Benner, Burnham Roswell. Lowell. 62 Sixth St.
1898 Benner, Herbert Orray..... Framingham. 45 Irving St.
1903 Benner, Richard Stanwood. Springfield. 25 Maple St.
1906 Bennett, Hamlin Perley.... Lynn. 41 Lewis St.
1902 Bennett, William Hurlburt. Hyde Park (Boston). 1349 River St.
1898 Benson, Charles Sweetser.. Haverhill. 50 Merrimack St.

1898 Berg, Tekla Amalia Josefina Lynn. 1 Atlantic St.
1903 Bergin, Stephen Albert.....Worcester. 33 Portland St.
1889 Barnard, Barnard Lecherzack Roxbury (Boston). 440 Warren St.
1914 Berry, Charles Francis.....Boston. 541 Commonwealth Av.
1908 Berry, Gordon.............Worcester. 390 Main St.
1896 Berry, John Cutting †1912 Worcester. 7 Highland St.
1890 Berry, Lauriston M †1908 Junction, Wyoming.
1909 Berry, William Christopher.Jamaica Plain (Boston). Office, Boston, 419 Boylston St.
1901 } 1914 } Bertrand, Alexis Everiste. { Lowell. 10 East Merrimack St.
1908 Besse, Frank Adelbert.....Orleans. Main St.
1907 Bessey, Earle Emerson.....Waban (Brookline). Office, Boston. 845 Beacon St.
1883 Best, Enoch George........Greenfield. 473 Main St.
1905 Bianco, Joseph Anthony....East Boston (Boston). 34 Gladstone St.
1901 Bicknell, Ralph Emerson...Swampscott. 148 Burrill St.
1909 Bieberbach, Walter Daniels.Worcester. 31 Pleasant St.
1907 Bier, Max Daniel..........Lawrence. 88 Concord St.
1906 Bigelow, Alice Houghton...Jamaica Plain (Boston). 14 Warren Sq.
1882 Bigelow, Charles Edwin....Leominster. 2 Park St.
1905 Bigelow, Edward Bridge...Worcester. 61 Pearl St.
1883 Bigelow, Enos Hoyt........Framingham Center. (Framingham). P. O. Box 213.
1913 Bigelow, James Bernard...Holyoke. 61 Pearl St.
1874 Bigelow, William Sturgis..Boston. 56 Beacon St.
1904 Binford, Ferdinand Augustus Hyannis (Barnstable). Main St.
1903 Binney, Horace............Boston. 205 Beacon St.
1894 Birge, Ella Freeman.......Provincetown.
1883 Birge, William Spafard....Provincetown. Pearl St.
1885 Birmingham, Robert Michael Lawrence. 170 Salem St.
1909 Birnie, John Mathews.....Springfield. 6 Chestnut St.
1914 Bisbee, Ernest Sydney......Boston. 777 Tremont St.
1878 Bixby, Josiah Peet.........Woburn. 55 Elm St.
1910 Bixby, Oliver Edward.....Lynn. 189 Lewis St.
1901 Blaine, Walter Edward.....Mattapoisett. 72 Main St.
1900 Blair, George Kenniston...Salem. 311 Essex St.
1897 Blair, Orland Rossini......Springfield. 580 State St.
1904 Blair, Orrin Curtis........Lynn. 79 N. Common St.
1882 Blaisdell, George Warren..Manchester. 21 Union St.
1913 Blaisdell, John Harper.....Lynn. Office, Boston. 111 Newbury St.
1904 Blake, Allen Hanson.......West Somerville (Somerville). 117 Elm St.
1868 Blake, Clarence John......Boston. 226 Marlboro' St.
1906 Blake, Gerald.............Boston. 212 Beacon St.
1888 Blake, Harrison Gray......Woburn. 512 Main St.
1890 Blake, John Bapst.........Boston. 657 Boylston St.
1861 Blake, John George........Boston. 212 Beacon St.
1901 Blake, Le Grande..........Riverside, R. I. 317 Bullock Point Av.
1898 Blakely, David Newton....Brookline. Office, Boston. 535 Beacon St.
1882 Blanchard, Benjamin Seaver Brookline. 432 Washington St.
1913 Blanchard, Paul Drake....Lowell. 226 Merrimack St.
1902 Blanchard, Randall Howard Pittsfield. 7 North St.
1909 Blanchard, William Herbert Quincy. Fore River Hospital.
1912 Blanchette, William Henry..Fall River. 142 Brightman St.
1904 Blenkhorn, James..........Stoneham. 301 Main St.
1910 Bliss, George Danforth.....Dorchester (Boston). 508 Washington St.
1905 Bliss, George Stephen......Fort Wayne, Ind. Ind. Sch. Feeble-Minded Youth.
1897 Bliss, Jesse Leonti.........Holyoke. 231 High St.
1893 Bliss, Wilbur Howard......Shrewsbury. Main St.
1872 Blodgett, Albert George †1911 Ware. 20 Park St.
1871 Blodgett, Albert Novatus †1913...Boston. 51 Mass. Av.
1898 Blodgett, John Hammond..Boston. 390 Commonwealth Av.
1912 Blodgett, Stephen Haskell..South Lincoln (Lincoln). Office, Boston. 419 Boylston St.
1908 Blood, George Willard.....Fall River. 723 Middle St.
1874 Blood, Robert Allen †1912 George's Mills, N. H.
1868 Boardman, William Elbridge †1909 Boston. 388 Marlboro' St.
1906 Boardman, William Parsons.Boston. 388 Marlboro' St.
1885 Boardman, William Sidney..Boston. 63 Mt. Vernon St.
1912 Bodwell, William Mortimer.Framingham. 2 Lexington St.
1910 Bogan, Frederick Leon.....Dorchester (Boston). Office, Boston. 374 Marlboro' St.
1878 Boland, Elisha Shepard....South Boston (Boston). 809 Broadway.
1912 Boland, Lawrence Francis.Welch, W. Va. Miners' Hospital, No. 1.
1871 Bolles, William Palmer †1913 Roxbury (Boston). 466 Warren St.
1891 Bolton, Charles James.....Somerville. 26 Chauncy St.
1891 Bond, Sarah Adams........Jamaica Plain (Boston). Office, Boston. 41 Fairfield St.
1904 Bond, Walter Legrand.....West Somerville (Somerville). 322 Highland Av.
1889 Bond, Willis George.......Revere. 76 Beach St.
1903 Bonnar, James Miller......New Bedford. 186 Pleasant St.
1914 Bonelli, Raymond Peter....Boston. 276 Hanover St.
1911 Bonneville, Alfred Joseph..Hatfield. 43 Main St.
1901 Bonney, Charles Austin, Jr..New Bedford. 67 Bedford St.
1903 Bonney, Robert............East Boston (Boston). 7 Princeton St.
1897 Boom, Augustus Keeper....Adams. 51 Park St.
1908 Boos, William Frederick...Brookline. Office, Boston. 374 Marlboro' St.
1877 Booth, Edward Chauncey †1915 Somerville. 40 Boston St.
1907 Boothby, Walter Meredith..Boston. 508 Commonwealth Av.
1902 Borden, Charles Richardson Cobb Brookline. Office, Boston. 520 Commonwealth Av.
1906 Borden, George Edward....Adamsville, R. I.
1893 Bossidy, John Collins......Boston. 419 Boylston St.
1911 Bostick, Warren John......West Springfield. 376 Main St.
1897 Bottomley, John Taylor....Boston. 165 Beacon St.
1897 Boucher, George Alphonse..Brockton. 20 Clinton Av.
1905 Boutwell, Horace Keith.....Boston. 416 Marlboro' St.
1913 Bouvier, Charles William..Holyoke. 251 Maple St.
1912 Bowditch, Harold..........Brookline. Office, Boston. 520 Commonwealth Av.
1903 Bowditch, Henry Ingersoll.Boston. 86 Bay State Road.
1881 Bowditch, Vincent Yardley.Boston. 506 Beacon St.
1913 Bowen, Enos Emanuel.....East Boston. 209 Sumner St.
1912 Bowen, James Francis.....Amherst. 6 Maple Av.
1887 Bowen, John Templeton....Boston. 14 Marlboro' St.
1867 Bowen, Seabury Warren †1905 Fall River. 217 Second St.
1912 Bowers, George Francis Haskell Worcester. 574 Main St.
1879 Bowers, Walter Prentice...Clinton. 264 Chestnut St.
1891 Bowker, Everett M.........Brookline. 322 Harvard St.
1894 Bowles, George Hall.......Plymouth, N. H. 2 Russell St.
1892 Bowman, Fred Raymond...Boston. 211 Huntington Av.
1914 Boyd, Francis Peter.......Springfield. 340 Bridge St.
1896 Boyd, James Van Wagner..Springfield. 137½ State St.
1885 Boyd, Samuel George......San Francisco, Calif. 133 Geary St.
1911 Boyden, Arthur Henry.....Worcester. 893 Main St.
1901 Boyer, Joseph Napoleon....Springfield. 577½ Main St.
1906 Boyle, Jeremiah Joseph....Cambridge. 1129 Cambridge St.

1903 Boyle, John Francis.......Lowell. 32 Whipple St.
1902 Brace, George Wells........Westfield. 5 Woronoco Av.
1886 Brackett, Elliot Gray.......Boston. 166 Newbury St.
1895 Bradford, Cary Carpenter..Southbridge. 67 Main St.
1873 Bradford, Edward Hickling Boston. 133 Newbury St.
1878 Bradford, Henry Withington Wolfborough, N. H.
1883 Bradley, Charles Seymour..Roxbury (Boston). 71 Walnut Av.
1914 Brady, Cecil Norbert......Lowell. St. John's Hosp.
1906 Brady, Frank Robert.....Lowell. 8 Merrimack St.
1903 Brady, James Francis......Boston. 599 Tremont St.
1908 Brady, Joseph Edward.....Brockton. 231 Main St.
1912 Brady, William Francis....Holyoke. 348 Dwight St.
1871 Bragdon, George Albert †1906 Middletown, Conn.
1890 Bragdon, Horace Elwood...East Boston (Boston). 7 Central Sq.
1894 Bragg, Frank Adelbert.....Foxborough. School St.
1902 Bragg, Leslie Raymond....Webster. 124 Main St.
1884 Brainerd, John Bliss.......Brookline. Office, Boston. 419 Boylston St.
1907 Brainerd, Walter Scott....Bradford (Haverhill). Office, Haverhill. 91 Merrimack St.
1909 Brant, Austin..............Boston. 483 Beacon St.
1903 Brayton, Roland Walker...Dorchester (Boston). 693 Washington St.
1909 Brearton, Edward John....Dorchester (Boston). 1015 Dorchester Av.
1885 Breck, Samuel.............Roxbury (Boston). Office, Boston. 238 Newbury St.
1901 Breed, Nathaniel Perkins..Douglaston, Long Island, N. Y.
1901 Breed, Nathaniel Pope.....Lynn. 9 Washington Sq.
1910 Breen, James Henry.......Hudson. 164 Main St.
1911 Bremer, John Lewis.......Boston. 295 Marlboro' St.
1887 Brennan, John Joseph......Worcester. 390 Main St.
1913 Breslin, John George......Charlestown (Boston). 19 Monument Av.
1911 Bresnahan, John Francis...Roxbury (Boston). Office, Boston. 69 Newbury St.
1914 Bresnihan, Frank Nesdel...Cambridge. 252 Harvard St.
1893 Brewster, George Washington Wales Boston. 213 Beacon St.
1898 Brickett, Beatrice Hannah.Newton Highlands (Newton). 68 Floral St.
1907 Brickley, William Joseph...Charlestown (Boston). Office, Boston. Relief Station, Haymarket Sq.
1912 Brides, Arthur Edward....Brockton. 101 Main St.
1899 Bridgman, Burt Nicholas...Jamaica Plain (Boston). 4 Greenough Av.
1893 Briggs, Charles Albert.....Freetown.
1880 Briggs, Edward Cornelius..Chestnut Hill (Newton). Office, Boston. 129 Marlboro' St.
1883 Briggs, Frederick Melancthon Boston. 536 Commonwealth Av.
1899 Briggs, Lloyd Vernon......Boston. 64 Beacon St.
1903 Brigham, Clarence Sumner.Leominster. 61 Pearl St.
1868 Brigham, Edwin Howard..Brookline. Office, Boston. 8 The Fenway
1912 Brigham, Francis Gorham.Boston. 355 Marlboro' St.
1907 Brigham, Fred Clayton....Springfield. 192 Walnut St.
1907 Bright, James Cooper......Fall River. 710 South Main St.
1906 Brindisi, Rocco............Boston. 149 Richmond St.
1908 Broderick, Frank Patrick..Jamaica Plain (Boston). 67 South St.
1911 Broderick, Thomas Frederick Boston. 483 Beacon St.
1893 Broga, William Wallace...Springfield. 820 State St.
1884 Broidrick, James Patrick †1914 Jamaica Plain (Boston). 815 Center St.
1906 Brooks, Edith May........Roxbury (Boston). 53 Parker Hill Av.
1874 Brooks, Lawton Stickney †1913 Springfield. 128 Chestnut St.
1890 Brooks, William Allen.....Boston. 167 Beacon St.
1893 Brough, David Dandie.....Boston. City Hall Annex.
1899 Broughton, Arthur Nicholson Jamaica Plain (Boston). 10 Roanoke Av.
1878 Broughton, Henry White...Jamaica Plain (Boston). 7 Lakeville Pl.
1896 Brousseau, William Gilbert..Cambridge. 2222 Mass. Av.
1911 Brown, Arthur Aloysius....Millbury. 19 Maple St.
1910 Brown, Arthur Linwood....Winchester. Office, Boston. 419 Boylston St.
1912 Brown, Chester Perkins....Cambridge. 89 Hancock St.
1894 Brown, Daniel Joseph......Springfield. 317 Main St.
1905 Brown, Edward Manning..Springfield. 182 State St.
1898 Brown, Edward Wells.....Northampton. 39 Main St.
1861 Brown, Francis Henry †1910 Boston. Office, 15 State St.
1883 Brown, Frank Byron.......Dorchester (Boston). 529 Washington St.
1884 Brown, George Artemas....Barre. Broad St.
1904 Brown, George Christopher.Worcester. 1 Trumbull Sq.
1914 Brown, Herbert Rutherford.Jamaica Plain (Boston). 47 Hampstead Road.
1911 Brown, Joseph.............Worcester. 28 Providence St.
1907 Brown, Lloyd Thornton....Boston. 372 Marlboro' St.
1869 Brown, Marshall Lebanon †1908 Address unknown.
1893 Brown, Martin Millard.....North Adams. 112½ Main St.
1901 Brown, Melvin James......Address unknown.
1873 Brown, Orland Jonas......North Adams. 112 Main St.
1902 Brown, Percy..............Boston. 155 Newbury St.
1914 Brown, Ralph Neally.......Malden. Malden Hospital.
1906 Brown, Wallace Everett....North Adams. Berkshire Hills Sanatorium.
1888 Brown, Wilfred Gardner...Plymouth. 4 North St.
1908 Brown, William James.....Boston. 1080 Boylston St.
1909 Brown, William John......Reading. 18 Salem St.
1914 Browne, William Edward..Boston. 366 Commonwealth Av.
1881 Browne, William Tyler....Norwich, Conn. 275 Broadway.
1898 Brownrigg, Albert Edward.Nashua, N. H. Highland Springs Sanitarium.
1888 Brownrigg, John Sylvester.Roxbury (Boston). 16 Delle Av.
1895 Bruce, Daniel Angus.......Atlantic (Quincy).
1896 Bruce, John Angus........Everett. 699 Broadway.
1913 Brunelle, Arthur Lord.....New Bedford. 1498 Acushnet Av.
1898 Brunelle, Pierre...........Lowell. 10 East Merrimack St.
1893 Bryant, Alice Gertrude....Boston. 502 Beacon St.
1906 Bryant, Clarence Edmund..Hyde Park (Boston). 101 Highland St.
1901 Bryant, Frederick.........Worcester. 778 Main St.
1892 Bryant, Giles Waite.......West Somerville (Somerville). 36 College Av.
1911 Bryant, John..............Cohasset. Office, Boston. 338 Marlboro' St.
1902 Bryant, John Edmund.....Haverhill. 50 Merrimack St.
1874 Bryant, Lewis Lincoln.....Cambridge. 930 Mass. Av.
1909 Bryant, Mason David......Lowell. 8 Merrimack St.
1887 Bryant, William Sohier....New York, N. Y. 41 East 33d St.
1909 Bucholz, Carl Hermann....Cambridge. Office, Boston. 139 Beacon St.
1893 Buck, Augustus Walker....Fall River. 252 Pine St.
1914 Buck, Clifton Leon........Danvers. 35 High St.
1882 Buck, Howard Mendenhall.Boston. 857 Beacon St.
1899 Buck, Maurice Allen.......Billerica.
1874 Buckingham, Edward Marshall Boston. 342 Marlboro' St.
1914 Buckley, Daniel Joseph.....Arlington. 240 Broadway.
1913 Buckley, George Ambrose..Brockton. 28 Main St.
1886 Buckley, Philip Townsend..South Boston (Boston). 399A Broadway.
1906 Buckley, William Stephen..Brighton (Boston). 253 Market St.

1911 Budington, Harold Fairchild Springfield. 1019 State St.
1899 Buehler, George Van Buskirk Cambridge. Office, Boston. 1075 Boylston St.
1903 Bufford, John Henry.......Brookline. Office, Boston. 390 Commonwealth Ave.
1898 Buffum, Herbert Edwin....Somerville. 129 Perkins St.
1874 Bulfinch, George Greenleaf.Brookline. 526 Harvard St.
1902 Bulkeley, Frank Stedman..Ayer. Washington St.
1889 Bullard, John Thornton....New Bedford. 428 County St.
1880 Bullard, William Norton...Boston. 89 Marlboro' St.
1907 Burbeck, Edward Kimball..Salem. 245 Lafayette St.
1906 Burgess, Charles James....Lawrence. 37 Whitman St.
1905 Burke, Francis Ramon.....Quincy. 1220 Hancock St.
1910 Burke, George Herbert.....Springfield. 36 Beaumont St.
1892 Burke, James Joseph......Easthampton. 10 Center St.
1896 Burke, Michael Francis....Natick. 12 West Central St.
1901 Burke, Walter Thomas.....Medford. 112 Salem St.
1899 Burke, William Henry, Jr..Cambridge. 2 Bond St.
1902 Burley, Benjamin Thomas.Worcester. 25 High St.
1909 Burlingham, Louis Herbert.Boston. Peter Bent Brigham Hosp.
1906 Burnett, Francis Lowell....Boston. 82 Beacon St.
1897 Burnett, Frank Hollis......Brockton. 153 Main St.
1894 Burnham, Elmond Arthur..Boston. 154 Huntington Av.
1901 Burnham, Joseph Forrest..Lawrence. 99 Bradford St.
1905 Burnham, Parker...........Gloucester. 37 Pleasant St.
1899 Burns, Frederick Stanford.Boston. 237 Marlboro' St.
1892 Burns, Hiram Hutchins....Plymouth. 9 North St.
1912 Burns, Newell Bly.........North Reading. State Sanatorium.
1886 Burrage, Walter Lincoln...Boston. 282 Newbury St.
1913 Burrell, Harry Cutter......Medford. 235 Salem St.
1907 Burrows, Marion Cowan...Lynn. 68 Ocean St.
1911 Burt, Edward Walter......Westport. Office, New Bedford. 321 Union St.
1885 Burt, Frank Leslie.........Boston. 528 Mass. Av.
1885 Burton, Stephen Casper....Pittsfield. 47 West Housatonic St..
1909 Bush, Arthur Dermont.....Burlington, Vt. 14 Hungerford Terrace.
1874 Bush, John Standish Foster.Winchendon. Toy Town Tavern.
1901 Bushnell, Edward Henry...Quincy. 566 Washington St.
1906 Bushold, Fred George.....Lawrence. 60 Saunders St.
1899 Butler, Charles Shorey.....Boston. 257 Newbury St.
1897 Butler, George Edward....Fall River. 674 South Main St.
1892 Butler, John Edward......Dorchester (Boston). 64 Monadnock St.
1905 Butler, Patrick Francis....Brookline. Office, Boston. 520 Beacon St.
1903 Butler, Richard Bernard...Fall River. 80 Columbia St.
1897 Butler, William Hodnett...Fall River. 234 Bedford St.
1904 Butterfield, George Kittredge Worcester. State Hosp.
1884 Buzzell, Daniel Thompson.Wilmington.
1892 Bychower, Victor..........Malden. 226 Cross St.
1895 Byrne, Charles Armstrong..Hatfield. 46 Main St.
1912 Byrne, Claudius James.....Worcester. 1056 Main St.
1904 Byrnes, Harry Francis.....Springfield. 4 Chestnut St.

C

1898 Cabot, Hugh...............Boston. 87 Marlboro' St.
1892 Cabot, Richard Clarke.....Boston. 1 Marlboro' St.
1911 Cady, Frederic Benjamin Mooers Cambridge. 1 Waterhouse St.
1886 Cahill, Charles Sumner....Cambridge, 311 Prospect St.
1910 Cahill, John William......Worcester. 390 Main St.
1908 Cahill, Thomas Joseph.....Cambridge. 1305 Cambridge St.
1894 Cain, William George......Nashua, N. H. 35 Concord St.
1903 Caisse, George Emile......Lowell. 724 Merrimack St.
1909 Calitri, Constant...........Lawrence. 99 Jackson St.
1891 Calkin, Barry Howes......Stellarton, N. S.
1894 Calkins, Cheney Hosmer...Springfield. 383 Union St.
1903 Calkins, Irving Romaro....Springfield. 299 Central St.
1862 Calkins, Marshall †1893 Springfield. 14 Maple St.
1884 Call, Emma Louise........Boston. 9 Mass. Av.
1873 Call, Norman †1910 Brookline. 61 Sewall Av.
1908 Callahan, Henry Alphonsus.Jamaica Plain (Boston). 336 Center St.
1887 Callanan, Sampson Aloysius.Roxbury (Boston). 109 Warren St.
1911 Camfill, Robert Emmet.....Springfield. 148 Chestnut St.
1858 Campbell, Benjamin Franklin........East Boston (Boston). 24 White St.
1902 Canedy, Charles Francis...Greenfield. 17½ Federal St.
1872 Canedy, Francis Joel †1913 Shelburne Falls (Shelburne). 60 Bridge St.
1909 Canfield, William Chase...Address unknown.
1912 Canney, Ellen Rose........New Bedford. 552 County St.
1904 Cannon, Walter Bradford..Cambridge. Office, Roxbury (Boston). 240 Longwood Av.
1913 Capeles, Thomas Francis...Haverhill. 120 Emerson St.
1898 Carden, Charles James....Haverhill. 276 Washington St.
1908 Carey, Bernard William...Fitchburg. 6 Prichard St.
1868 Carleton, Charles Greenleaf.Lawrence. 301 Essex St.
1896 Carleton, Dudley..........Springfield. 137½ State St.
1898 Carleton, Ralph............Springfield. 10 Temple St.
1906 Carley, Frederic James....North Attleborough. 1 Church St.
1909 Carley, Margaret Elizabeth.Boston. 483 Beacon St.
1911 Carlisle, Frank Henry.....Foxborough. State Hosp.
1908 Carlton, Frank Carr.......Salem. 16 North St.
1906 Carney, Patrick Joseph.....Worcester. 626 Southbridge St.
1910 Carr, Arthur Wyman......Bridgewater. 76 South St.
1912 Carr, Christopher James...Saxonville (Framingham). 26 Central St.
1909 Carr, Gladys Lydia........Lynn. 125 Ocean St.
1906 Carr, Percy Whitman......Hyde Park (Boston). 16 Neponset Blk.
1909 Carroll, Charles Curtis.....Dorchester (Boston). 10 Esmond St.
1911 Carroll, Henry Gerald.....Peabody. Office, Salem. 304 Essex St.
1905 Carroll, John Joseph.......Holyoke. 120 Chestnut St.
1899 Carroll, John Philip.......Woburn. 16 Winn St.
1914 Carroll, Michael James....Lenox. Main St.
1888 Carroll, Thomas Francis...Lowell. 219 Central St.
1897 Carruth, Sidney Stetson...Dorchester (Boston). 713 Dudley St.
1913 Carvell, Hanford..........Gloucester. 1050 Washington St.
1914 Carvill, Alphonso Holland..Somerville. 28 Highland Av.
1905 Carvill, Lizzie Maud.......Somerville. Office, Boston. 101 Newbury St.
1902 Cary, Foster Harrington...Address unknown.
1912 Casey, John Francis.......Allston (Boston). 94 Franklin St.
1908 Casselberry, Clarence Marmaduke Brookline. Office, Boston. 1075 Boylston St.
1912 Cassels, Louis Raymond...Worcester. 47 Pleasant St.
1908 Cassidy, James Joseph.....Lowell. 10 East Merrimack St.
1913 Castleman, Philip..........Roxbury (Boston). 41 Ruggles St.
1914 Caswell, Bartram Horace..Somerville. 196 Broadway.
1910 Caswell, Walter Emery....Campello (Brockton). 1147 Main St.
1903 Caulfield, Thomas Edward.Woburn. 14 Church Av.
1897 Cavanagh, Charles Russell.Dorchester (Boston). 19 Richmond St.
1905 Cavanaugh, Thomas Edward Holyoke. 245 Maple St.
1905 Celce, Frank Frederick....Holyoke. 264 Maple St.
1905 Celce, Jean Henriette......Holyoke. 264 Maple St.
1913 Chace, Fenner Albert......Fall River. 373 North Main St.
1888 Chadbourne, Arthur Patterson Boston. 193 Beacon St.
1895 Chadwick, Henry Dexter...Westfield. State Sanatorium.
1906 Chalmers, Hattie Elizabeth.Marlborough. 64 West Main St.

1908 Chalmers, Robert.......... Woburn. 49 Pleasant St.
1914 Chamberlain, Harold Augustus Worcester. City Hospital.
1872 Chamberlain, Myron Levi.. Boston. 19 Exeter St.
1895 Chamberlain, William Eugene Rutland.
1907 Champion, Merrill Edwin.. Greenville, N. C. Box 107.
1905 Chandler, Clarence Luther. Fitchburg. 15 Adams St.
1883 Chandler, Henry Beckles... West Newton (Newton). Office, Boston. 34½ Beacon St.
1873 Chandler, Luther Graves †1912 Townsend. Main St.
1888 Chandler, Norman Fitch... Medford. 82 High St.
1911 Chandler, Thomas Evans... Boston. 19 Bay State Rd.
1873 1878 Channing, Walter..... Brookline. Boylston St and Chestnut Hill Av.
1898 Chapin, Clifford Samuel.... Great Barrington. 321 Main St.
1891 Chapin, Delia Lucretia..... Springfield. 313 State St.
1906 Chapin, Laurence Dudley.. Springfield. 20 Maple St.
1885 Chapin, Walter Henry..... Springfield. 675 State St.
1899 Chapman, Charles Ratchford Springfield. 174 State St.
1913 Charbonneau, Noe Napoleon. Grafton. Fisherville P. O.
1886 Charles, Orlando Warrington Bryantville (Pembroke).
1900 Charteris, Mary Alena..... Worcester. 167 Pleasant St.
1908 Chase, Charles Otis........ Watertown. 51 Mt. Auburn St.
1900 Chase, Edwin Llewellyn.... Shrewsbury.
1908 Chase Gilman Leeds....... Clinton. 215 High St.
1907 Chase, Harrison Ayer...... Brockton. 231 Main St.
1909 Chase, Heman Baker....... Hyannis (Barnstable). Main St.
1886 Chase, Heman Lincoln..... Brookline. 126 Harvard St.
1902 Chase, Henry Melville..... Boston. 409 Marlboro' St.
1867 Chase, Horace............. Boston. Equitable Bldg.
1855 Chase, Ira Eaton †1897 Haverhill. 59 Park St.
1902 Chase, Walter Greenough... Boston. 279 Marlboro' St.
1914 Cheever, Austin Walter..... Mattapan (Boston). 1531 Blue Hill Av.
1886 Cheever, Clarence Alonzo... Mattapan (Boston). 1531 Blue Hill Av.
1902 Cheever, David............. Boston. 355 Marlboro' St.
1858 Cheever David Williams †1907 Boston. 557 Boylston St.
1891 Chenery, William Elisha... Boston. 222 Huntington Av.
1886 Cheney, Frederick Edward. Concord. Office, Boston. 126 Commonwealth Av.
1905 Chesley, Alfred Ervan..... Lawrence. 181 Essex St.
1895 Chicoine, Isidore Hermanigilde Lynn. 206 Lewis St.
1876 Chipman, William Reginald †1915 Chelsea. 44 County Road.
1906 Chisholm, Miles Dudley.... Westfield. 128 Elm St.
1854 Choate, David †1899 Salem. 35 Norman St.
1900 Choate, Horace Henry...... Gloucester. 80 Middle St.
1903 Cholerton, Herbert......... West Somerville (Somerville). 94 College Av.
1902 Christian, Henry Asbury... Boston. 252 Marlboro' St.
1908 Christiernin, Charles Leonard East Orange, N. J. Office, New York, N. Y. 1 Madison Av.
1895 Church, Charles Albert.... Millbury. Elm St.
1912 Church, Claude Henry..... Address unknown.
1906 Churchill, John Darling.... Plymouth. 63 Court St.
1895 Chute, Arthur Lambert.... Boston. 350 Marlboro' St.
1888 Cilley, Daniel Plummer.... Westborough. 30 East Main St.
1913 Claffy, John McMahon..... Springfield. 172 Main St.
1891 Clancy, William Henry.... East Cambridge (Cambridge). 80 Otis St.
1900 Clap, Edmund Wright...... Boston. 390 Commonwealth Av.
1903 Clapp, Arthur Martin...... Springfield. 10 Chestnut St.
1892 Clapp, Frank Horace...... North Grafton (Grafton).
1898 Clark, Albert Ulysses Franklin Westborough. 10 Parkman St.
1869 Clark, David †1908 Springfield. 26 Maple St.
1901 Clark, Edward James...... Lowell. 219 Central St.
1901 Clark, Ezra Warren †1914 Brockton. 3 Garden Road.
1913 Clark, Frank Robinson..... Newtonville (Newton). 227 Walnut St.
1901 Clark, Frederick Timothy... Westfield. 80 Elm St.
1893 Clark, George Henry....... Holyoke. 441 High St.
1905 Clark, George Oliver....... Boston. 142 Beacon St.
1911 Clark, Harry Ainsworth.... Port Limon, Costa Rica. The Hospital.
1897 Clark, James Colby Dorr... Medford. 4 Washington St.
1906 1913 Clark, John Donovan...... Andover. 111 Main St.
1886 Clark, Joseph Payson...... Boston. 71 Marlboro' St.
1880 Clark, Julius Stimpson †1911 Melrose. 109 Mrytle St.
1889 Clark, Leonard Brown..... Waverley (Belmont). 36 Sycamore St.
1897 Clark, Mary Wilson...... Medford. 4 Washington St.
1892 Clark, Sidney Avery....... Northampton. 124 Main St.
1903 Clark, Thomas Francis..... Taunton. 62 Broadway.
1910 Clark, Webster Kimball.... Greenfield. 6 Franklin St.
1907 Clark, William Irving, Jr... Worcester. 37 Pearl St.
1914 Clark-MacLeod, Emily..... Boston. 260 Newbury St.
1901 Clarke, Genevieve.......... Cambridge. 825 Mass. Av.
1911 Clarke, Harry Carver...... Lynn. 180 South Common St.
1904 Clarke, Inez Louise........ Cambridge. 825 Mass. Av.
1888 Clarke, Israel James....... Haverhill. 112 Emerson St.
1910 Clarke, Joshua Williams... Attleborough. 48 Bank St.
1902 Clarke, Louis Henry....... Holyoke. 282 Maple St.
1913 Clarke, Thomas Greene.... Langley, Wash. Anthes Av.
1897 Cleary, James............. Cambridge. 770 Mass. Av.
1914 Cleary, Robert Emmett.... Holyoke. 1049 Dwight St.
1901 Cleaves, Ezra Eames...... Rockport. 27 Main St.
1895 Cleaves, Frederick Henry.. Brookline. Office, Boston. 287 Atlantic Av.
1908 Cleaves, Helen Frances Taft. Palmer. Monson State Hospital
1880 Cleaves, James Edwin..... Medford. 8 Salem St.
1874 Clement, George Wilmot... Roxbury (Boston). 275 Warren St.
1902 Clement, Merton Wallace.. Worcester. 811 Main St.
1911 Cleveland, Heber Howe.... Wellesley Hills. Office, Boston. 205 Beacon St.
1875 Cliff, Leander Albert....... Boston. 427 Shawmut Av.
1901 Cloudman, Harry Radcliffe. Brockton. 33 Clinton Av.
1911 Clymer, George............ Boston. 366 Commonwealth Av.
1914 Coates, Edward Augustus.. Winthrop. 6 Herman St.
1892 Cobb, Albert Crocker...... Marion. Front St.
1895 Cobb, Carolus Melville..... Lynn. Office, Boston 419 Boylston St.
1907 Cobb, Chester Thompson... Easthampton. Office, Boston. 419 Boylston St.
1893 Cobb, Farrar.............. Boston. 28 Commonwealth Av.
1889 Cobb, Frederic Codman.... Boston. 11 Marlboro' St.
1912 Cobb, Gardner Nathan..... Boston. North End Park. U. S. S. "Ranger."
1897 Cobb, Oliver Warren....... Easthampton. 59 Main St.
1914 Coburn, Harry Ray........ Tewksbury. State Infirmary.
1904 Coburn, Horace Fordyce... Lowell. 9 Central St.
1898 Cochran, William James... Natick. 50 West Central St.
1914 Cochrane, Robert Carlisle.. Boston. 270 Bay State Rd.
1905 Cockett, Marguerite Standish New York, N. Y. 35 East 62nd St.
1895 Codman, Ernest Amory.... Boston. 227 Beacon St.
1912 Cody, Edmond Francis..... New Bedford. 105 South 6th St.
1912 Cody, Harry Clinton....... Lawrence. 539 Broadway.
1885 Coffin, Arthur Baylies...... Dorchester (Boston). Office Boston. 159 Devonshire St.
1907 Coffin, Frank Herbert...... Haverhill. 91 Emerson St.
1896 Coffin, Rockwell Augustus.. Boston. 234 Clarendon St.
1887 Cogan, Joseph Ambrose.... Boston. 419 Boylston St.
1892 Cogswell, George Proctor... Cambridge. 18 Garden St.
1896 Cogswell, William.......... Haverhill. 151 Merrimack St.
1910 Colberg, Peter Albert...... Worcester. 17 Stebbins St.
1897 Colburn, Harry Hayford... Boston. 108 Mt. Vernon St.

1912 Cole, Arthur Judson.......Holbrook. North Franklin St.
1892 Collier, Lawrence Henry Goodwin Jamaica Plain (Boston). 212 South St.
1910 Collins, Joseph Daniel.....Northampton. 90 Main St.
1903 Collins, Richard...........Waltham. 837 Main St.
1899 Collins, William James....Northampton. 90 Main St.
1908 Collins, William Morris....Lowell. 22 Central St.
1881 Colt, Henry................Pittsfield. 193 South St.
1879 Comey, Perley Pierce......Augusta, Ga. Walton Way and Telfair St.
1883 Conant, William Merritt...Boston. 486 Commonwealth Av.
1913 Condrick, John Joseph.....Brockton. 68 Main St.
1883 1900 Cone, Dwight Eleazer.. Fall River. 938 South Main St.
1913 Conley, Brainard Francis..Malden. 203 Main St.
1909 Conlin, Robert Emmett....Woburn. 353 Main St.
1906 Conlon, Frank Aloysius....Lawrence. 301 Essex St.
1891 Connell, Arthur Irving.....Fall River. 456 South Main St.
1909 Connelly, John Edward....Brookline. 156 Cypress St.
1902 Conner, Homer Leigh......Haverhill. 85 Emerson St.
1897 Connor, Charles Frank.....New Bedford. 11 North Orchard St.
1910 Connor, George James.....Haverhill. 50 Merrimack St.
1902 Conro, Arthur Clifton......Attleborough. 15 Mechanic St.
1906 Conroy, Edward Cornelius.Andover. Office, Lawrence. 263 Essex St.
1895 Conroy, Peter John........Everett. 355 Broadway.
1879 Cook, Charles Henry.......Natick. 35 West Central St.
1914 Cook, James Henry........Braintree. 346 Washington St.
1914 Cook, John William........Mansfield. 114 North Main St.
1905 Cook, Philip Howard......Worcester. 771 Main St.
1893 Cook, Snow Parker Freeman Gloucester. 132 Main St.
1895 Cooke, George Andrews....Montague.
1905 Cooley, Abbott Lathrop....Chicopee Falls (Chicopee). 130 Broadway.
1885 Coolidge, Algernon.........Brookline. Office, Boston. 613 Beacon St.
1904 Coolidge, Frederic Shurtleff.Pittsfield. 472 West St.
1893 Coolidge, John Nelson......New York, N. Y. 1 Madison Av.
1901 Coolidge, Sumner..........Middleborough. Lakeville State Sanatorium.
1898 1903 Coon, George Bailey......East Walpole (Walpole).
1912 Cooney, Margaret Blanche..Haverhill. 67 Winter St.
1909 Cooney, Michael Edward...Northampton. 39 Main St.
1892 Cooper, Almon.............Brookline. 67 Marion St.
1878 Copeland, Horatio Franklin Whitman. †1913 532 Washington St.
1914 Coppinger, Sarah Elizabeth.Needham. 299 Highland Av.
1906 Corbett, Jeremiah Joseph..Malden. Office, Boston. 520 Beacon St.
1911 Corcoran, George Bartlett..West Springfield. 30 Park St.
1909 Corcoran, John Gilbert.....Hamilton.
1905 Corey, Frederick Hall......Rockland. 361 Union St.
1907 Coriat, Isador Henry.......Boston. 416 Marlboro' St.
1911 Cornforth, Herbert Huskisson Fitchburg. 17 Westminster St.
1913 Cornish, Solon Washington..Everett. 64 Corey St.
1907 Cornwall, Andrew Payne...Brookline. Office, Boston. 535 Beacon St.
1904 Cort, Parker Martin.......Springfield. 691 State St.
1906 1913 Costello, John Henry... Dorchester (Boston). 68 Pleasant St.
1905 Coté, Honoré Joseph.......Boston. 23 Warren Av.
1912 Cotter, Timothy Francis....Haverhill. 298 Washington St.
1897 Cotton, Frederic Jay.......Boston. 520 Commonwealth Av.
1913 Couch, Mary Catherine....Chicago, Ill. 2551 North Clark St.
1895 Coues, William Pearce.....Boston. 31 Mass. Av.
1895 Couillard, Pierre Leonard..Manchaug (Sutton).
1892 Councilman, William Thomas Boston. Office, Roxbury (Boston). 240 Longwood Av.
1911 Coupal, James Francis.....Roxbury (Boston). Office, Boston. 1091 Boylston St.
1914 Coursey, Frank Rudolph...Boston. 802 Tremont St.
1893 Courtney, Joseph William..Boston. 436 Marlboro' St.
1914 Courtney, Thomas Joseph..Waltham, 26 Common St.
1892 Cousins, Nicholas William.Waltham. 17 Crescent St.
1872 Cowles, Edward †1910 Plymouth. 8 Sever St.
1886 Cowles, Frank Augustus...Beverly. 276 Cabot St.
1901 Cowles, Frederick Waterman West Brookfield.
1910 Cowles, William Lee.......Boston. 497 Beacon St.
1887 Cowles, William Norman...Cataumet (Bourne).
1907 Cox, Ann Caroline..........Boston. 70 Huntington Av.
1914 Cox, Oscar Francis........Boston. 338 Mass. Av.
1905 Cox, Simon Francis........Mattapan (Boston). Office, Boston. 926 Tremont Bldg.
1913 Cox, Stanley Cullen........Holyoke. 242 Maple St.
1901 Coyne, Thomas Joseph.....Roxbury (Boston). 636 Dudley St.
1914 Crabtree, Ernest Granville..Boston. 4 Walnut St.
1892 Craig, Daniel Hiram.......Address unknown.
1905 Craig, William Gibson.....Springfield. 317 Main St.
1889 Craigin, George Arthur.....Boston. 18 Hereford St.
1891 Cram, John Wesley........Colrain.
1896 Crandell, Arthur Richmond.Taunton. 48 Church Green.
1899 Crandon, Le Roi Goddard..Boston. 366 Commonwealth Av.
1906 Crane, Bayard Taylor.....Rutland. Maple Av.
1909 Crane, Clarence............Boston. 224 Huntington Av.
1899 1907 Crawford, Francis Xavier. Boston. Deer Island Hospital.
1910 Crawford, Frank Wallis....Holbrook. North Franklin St.
1885 Crawford, Sarah Marcy †1911 Newton Center (Newton). 194 Ward St.
1914 Creamer, William Henry...Fall River, 466 N. Main St.
1908 Creely, Oscar Slade........Watertown. 63 Mt. Auburn St.
1906 Cregg, Francis Aloysius....Lawrence. 477 Essex St.
1907 Crispo, Peter Timothy.....Fall River. 439 Bedford St.
1909 Crittenden, George Alanson.Huntington.
1900 Crittenden, Samuel Wright..Dorchester (Boston). State Hospital.
1894 Croacher, Anna Wood......New Bedford. 51 Fifth St.
1892 Crocker, Benton Pulsifer...Foxborough. South St.
1866 Crocker, John Myrick......Cambridge. 335 Harvard St.
1904 Crocker, Louis Allen.......Brewster.
1887 Crocker, Susan Elizabeth †1901 Los Angeles, Calif. 849 W. 34th St.
1891 Crockett, Eugene Anthony.Boston. 298 Marlboro' St.
1898 Croft, Benjamin Pomeroy..Bernardston. Office, Greenfield. 17 Federal St.
1913 Croke, Louis Ward........Dorchester (Boston). 22 Mather St.
1914 Cronin, Herbert Joseph....Cambridge. 69 Concord St.
1896 Cronin, Henry William....Worcester. 31 Trumbull St.
1899 Cronin, Michael John.......Roxbury. Office, Boston. 520 Beacon St.
1898 Cronin, Thomas Joseph....Worcester. 49 Pleasant St.
1909 Crosbie, Arthur Hallam....Boston. 260 Clarendon St.
1903 Crosby, Leander Marshall..Wakefield. Office, Boston. 419 Boylston St.
1910 Crosby, Walter Hiram.....Brighton (Boston). 305 Faneuil St.
1912 Cross, Albert Elmer.......Worcester. 390 Main St.
1899 Cross, William Patrick.....South Boston (Boston). 491 Broadway.
1897 Crossman, Frank Albert...Dorchester (Boston). 677 Dudley St.
1881 Croston, John Francis.....Haverhill. 83 Emerson St.
1885 Crowell, Samuel...........Dorchester (Boston). 8 Monadnock St.
1897 Crowley, Jeremiah Francis.Adams. 15 Park St.

1911 Cuddy, James Francis.....Athol. 585 Main St.
1887 Culbertson, Emma Valeria Pintard Bicknell Boston. 33 Newbury St.
1899 Cummin, John White......Boston. 9 Mass. Av.
1901 Cummings, Alvah Cochran.Newton. 337 Washington St.
1911 Cummings, Dana Frank....Cherryfield, Me.
1876 Cummings, Edwin Francis.Revere. Office, Boston. 43 State House.
1904 Cummings, John Joseph....Worcester. 53 Pleasant St.
1901 Cummings, Morton Everett.Malden. 358 Pleasant St.
1888 Cummings, Mott Alvah.....Winchester. 69 Church St.
1905 Cummins, Loretta Joy.....Boston. 536 Commonwealth Av.
1894 Cumston Charles Greene...Geneva, Switzerland. 3 Rue Bellot.
1913 Cunningham, Allen Rowe..Boston. City Hospital.
1903 Cunningham John Henry, Jr. Boston. 46 Gloucester St.
1914 Cunnningham, Joseph Henry Cambridge. 959 Mass. Av.
1877 Cunningham, Thomas Edward Cambridge. 847 Mass. Av.
1914 Cunningham, Thomas Edward, Jr. Cambridge. 1010 Mass. Av.
1905 Curley, Clarence Proctor...Provincetown. Commercial St.
1914 Curran, John Francis......Worcester, 223 Salisbury St.
1905 Curran, Simon Francis.....Dorchester (Boston). 104 Norfolk St.
1873 } 1893 } Currie, John Zebulon.....Cambridge. 907 Mass. Av.
1912 Currier, Cyrus Richardson.Sandwich. Main St.
1900 Currier, William Eugene...Leominster. 87 Merriam Av.
1890 Currier, William Hale.....Pittsfield. 69 Linden St.
1898 Curry, Edmund Farnham..Fall River. 499 Hanover St.
1908 Curry, Ernest Francis.....Sagamore (Bourne). Keith Block.
1909 Curtis, Charles Leverett...Salem. 78 Federal St.
1887 Curtis, Francis George.....Chestnut Hill (Newton). 399 Hammond St.
1910 Curtis, Harlan Fuller......East Longmeadow (Longmeadow). South Main St.
1890 Curtis, Henry Fuller.......Somerville. 145 Perkins St.
1899 Curtis, William Goodwin...Wollaston (Quincy). 10 Grand View Av.
1906 Cushing, Arthur Alden.....Brookline. 108 Marion St.
1875 Cushing, Ernest Watson...Roxbury (Boston). Office, Boston. 168 Newbury St.
1913 Cushing, Harvey...........Brookline. Office, Roxbury (Boston). Peter Bent Brigham Hospital.
1881 Cushing, Hayward Warren.Boston. 70 Commonwealth Av.
1887 Cushman, Andrew Bernard.South Dartmouth (Dartmouth).
1882 Cushman, George Thomas..Roxbury (Boston). 46 Dudley St.
1911 Cushman, Howard Lewis..Methuen. 28 Annis St.
1906 Cusick, Lawrence Francis..Nahant. Office Boston. 99 Newbury St.
1898 Cusick, Thomas Francis....Taunton. 126 Weir St.
1898 Cutler, Charles Norton.....Chelsea. 309 Washington Av.
1872 Cutler, Elbridge Gerry.....Boston. 214 Beacon St.
1912 Cutler, George David......Boston. 483 Beacon St.
1914 Cutler, Myron Fred........Southbridge. 39 Hamilton St.
1902 Cutter, Arthur Hardy......Lawrence. 333 Broadway.
1856 Cutter, Ephraim †1898 West Falmouth (Falmouth).
1908 Cutter, Irving Taylor......Winchester. 31 Church St.
1887 Cutts, Harry Madison......Brookline. 105 Aspinwall Av.
1906 Cyr, Emile Edouard.......Lawrence. 81 Bradford St.

D

1905 Dacey, Cornelius Joseph...Brockton. 12 Cottage St.
1902 Dadmun, Eliza Josephine..Allston (Boston). 1376 Commonwealth Av.
1904 Dailey, Edward Joseph....Somerville. 46 Bow St.
1913 Dalton, Charles Howard...Brookline. 405 Harvard St.
1908 Dalton, George Frederick..Springfield. 6 Maple St.
1882 Daly, Bernard Thomas.....Roxbury (Boston). 320 Dudley St.
1905 Daly, Jeremiah James.....North Andover. 8 North Main St.
1898 Daly, Timothy Joseph......Lawrence. 62 Bradford St.
1896 Daly, William Joseph......Boston. 31 Mass. Av.
1902 Dame, Fred Russell........South Braintree (Braintree). 1010 Washington St.
1895 Damon, Arthur Llewellyn..North Wilbraham (Wilbraham). Chapel St.
1906 Dana, Harold Ward........Brookline. Office, Boston. 483 Beacon St.
1891 Dane, John................Jamaica Plain. Office, Boston. 29 Marlboro' St.
1906 Danforth, Harland Abbott..Cliftondale (Saugus). 276 Lincoln Av.
1878 Daniels, Edwin Alfred.....Boston. 302 Newbury St.
1908 Darling, Arthur Edwin.....Lynn. 12 Broad St.
1895 Darling, Charles Balfour...Roxbury (Boston). Office, Boston. 419 Boylston St.
1894 Darling, Eugene Abraham.Cambridge. 138 Brattle St.
1890 Darrah, Rufus Elmer......Newport, R. I. 10 Bull St.
1907 Dascombe, Otho Lee.......Waltham. 259 Moody St.
1900 Daudelin, Simeon Alphonse.Worcester. 11 Elm St.
1871 Davenport, Bennett Franklin, †1910 Watertown. Office, Boston. 161 Tremont St.
1877 Davenport, Francis Henry.Boston. 390 Commonwealth Av.
1887 Davenport, James Henry...Providence, R. I. 210 Benefit St.
1906 Davidson, Henry James Duff Springfield. 26 Maple St.
1891 Davidson, Kallman Meyer..Roxbury (Boston). Office, Boston. 31 McLean St.
1895 Davis, Bessie Delano.......Cambridge. 21 Magazine St.
1911 Davis, Charles Allen.......South Dennis (Dennis).
1899 Davis, Charles Henry......South Hamilton (Hamilton).
1888 Davis, Ella Maxfield......Holyoke. 188 Chestnut St.
1906 Davis, Ernest Leland......Springfield. 106 State St.
1907 Davis, Frank Albert.......Boston. Hotel Brunswick.
1913 Davis, Frederick Durand...Westfield. 57 North Elm St.
1914 Davis, Henry Levi.........Lynn. 12 Van Buren Terr.
1899 Davis, Lincoln............Boston. 205 Beacon St.
1906 Davis, Minot Flagg........Boston. 520 Beacon St.
1899 Davis, Percy Guy..........Deerfield.
1880 Davis, Samuel Thomas.....Vineyard Haven (Tisbury).
1897 Davis, Stephen Rich.......Lynn. 188 Chestnut St.
1898 } 1913 } Davis, William Horace..{ Dorchester (Boston). 23 Beaumont St.
1905 Davison, Arthur Howard...Dorchester (Boston). 564 Washington St.
1914 Dawson, Roger Paul.......Boston. 82 St. James Av.
1911 Day, Charles Orrin........Hingham. Main St.
1892 Day, Clarence Currier.....Newburyport. 21 Titcomb St.
1905 Day, Hilbert Francis......Boston. 657 Boylston St.
1914 Deacy, John Joseph........Lawrence. 301 Essex St.
1893 Deal, Edward Edwin......Brookline. 147 Winthrop Road.
1892 Deal, George Francis......Malden. 807 Salem St.
1896 Dean, Ralph Denniston....Taunton. 152 High St.
1866 Deane, Asahel Sumner †1902 Taunton. 60 Broadway.
1887 Deane, Wallace Harlow....Springfield. 137½ State St.
1894 Deans, Herbert Clair......Roxbury (Boston). 27 Maywood St.
1907 Dearborn, George Van Ness..Cambridge. Office, Boston. 416 Huntington Av.
1908 Dearborn, Henry Follansby..Lawrence. 193 Garden St.
1906 Dearborn, Henry Hale.....Becket.
1872 Dearborn, John George †1907 Charlestown (Boston). 2 Wood St.
1893 Dearing, Henry Lincoln....Braintree.
1881 DeBlois, Thomas Amory...Boston. 523 Newbury St.
1914 Deering, Charles Fuller....Danvers. 57 Elm St.
1905 Deering, George Edwin....Worcester. 131 Pleasant St.

1890 Dehn, Edward William....New Bedford. 23 Linden St.
1886 DeLand, Charles Airmet...Warren. 7 Quaboag St.
1898 De Langle, Charles Petit...Lynn. 540 Western Av.
1884 Delahanty, William Joseph.Worcester. 5 Trumbull Sq.
1885 / 1912 Delano, Samuel...........Boston. 39 Newbury St.
1893 De Lue, Frederick Spaulding Needham. Office, Boston. 99 Newbury St.
1911 Dempsey, James Edward..Newton. 395 Washington St.
1895 Denig, Blanche Alpine.....Boston. 541 Boylston St.
1911 Dennen, Ralph Waite......Waltham. 258 Moody St.
1900 Dennett, Alonzo Gustin.....Lowell. 40 Riverside St.
1897 Dennett, Charles Augustus.Arlington. 754 Mass. Av.
1898 Dennett, Daniel Clement...Winchester. 7 Washington St.
1906 Denning, Edward John....South Boston (Boston). 577 Broadway.
1909 Denning, Frederic Joseph..South Boston (Boston). 216 Broadway.
1901 Denning, William Edward..Worcester. 63 Pleasant St.
1896 Dennison, Archibald Sayre.Lynn. 7 Franklin St.
1895 Denny, Francis Parkman...Brookline. 111 High St.
1904 DeNormandie, Robert Laurent Boston. 355 Marlboro' St.
1910 Derby, Charles Arthur.....New Bedford. 194 Purchase St.
1903 Derby, George Strong......Boston. 7 Hereford St.
1892 Derby, William Parsons....Cambridge. 120 Pearl St.
1914 Dervin Laurence James....Somerville. 218 Highland Av.
1911 Desmond, Clarence Francis.Waltham. 552 Main St.
1909 Devenny, Joseph Henry....Dorchester (Boston). 39 Florida St.
1904 Devere, Fred Hewitt........Sterling. Waushacum Av.
1884 Devine, William Henry....South Boston (Boston). 595 Broadway.
1903 Devlin, Peter Clarke........Lynn. 784 Western Av.
1886 Dewey, Charles Gipson.....Dorchester (Boston). 44 Alban St.
1906 Dewing, Louis Alexander..Boston. 215 Huntington Av.
1893 Dewis, John William.......Brookline. Office, Boston. 69 Newbury St.
1913 DeWolf, Charles Wentworth.Tewksbury. State Infirmary.
1887 Dexter, Franklin..........Beverly. Office, Boston. 247 Marlboro' St.
1905 Dexter, Fred Fay..........Springfield. 2 Temple St.
1907 Dickinson, Gyrdie Willie...Everett. Office, Boston. 673 Boylston St.
1898 Dickson, Richard Ensign...Holyoke. 598 Dwight St.
1910 Dillon, Michael John.......Springfield. 182 State St.
1894 Dion, Thomas Joseph......West Quincy (Quincy). 59 Cross St.
1912 Disbrow, Edward Perry....Worcester. City Hospital.
1901 Dix, George Alfred........Worcester. 105 Pleasant St.
1911 Dixon, Arthur.............Boston. 360 Mass. Av.
1871 Dixon, Lewis Seaver.......Boston. 232 Clarendon St.
1881 Dixon, Robert Brewer......Boston. 232 Clarendon St.
1911 Dobson, William Marshall..Dorchester (Boston). State Hospital.
1896 Dodd, Isaac Spencer Finney Pittsfield. 24 North St.
1912 Dodd, John Edward........Holliston. Office, Framingham. 33 Union Av.
1914 Dodd, Walter James.......Boston. 205 Beacon St.
1900 Dodge, Arthur Malcolm....Boston. 483 Beacon St.
1907 Dodge, George Francis.....Wilmington.
1886 Dodge, William Wooldredge.Boston. 228 Mass. Av.
1882 Doggett, Frederic Fobes....South Boston (Boston). 805 Broadway.
1885 Dolan, William Andrew....Fall River. 546 South Main St.
1899 Dole, Charles Frederick....Sharon. 2 North Main St.
1904 Donahue, Francis William.Greenfield. 178 Main St.
1889 Donahue, Hugh............Haverhill. 21 White St.
1895 Donahue, William Francis.Cambridge. 2294 Mass. Av.
1903 Donaldson, James Frank...Salem. 32 Lynde St.
1901 Donlan, Charles Edwin....Boston. Long Isld. Hosp.
1908 Donnell, Herbert Anthony..Medford. 374 Main St.
1893 Donnelly, John Bernard....West Gardner (Gardner).
1885 Donoghue, Daniel Francis..Holyoke. 240 Maple St.
1894 Donoghue, Francis Dennis..Boston. 864 Beacon St.
1904 Donoghue, John Joseph....Worcester. 8 Vernon St.
1908 Donohue, Jeremiah Joseph.Worcester. 48 Vernon St.
1887 / 1904 Donovan, Michael Ricard. Lynn. 101 North Common St.
1911 Donovan, Thomas Roche...Fitchburg. 40 Prichard St.
1910 Doonan, Henry Edward....South Hadley Falls. (South Hadley).
1880 Dorcey, James Edmund....Boston. 172 Harrison Av.
1900 Dorgan, Joseph Aloysius...Lawrence. 477 Essex St.
1909 Dorion, Kinton............Lawrence. 129 Concord St.
1885 Dorr, Charles Alonzo......Hingham. 304 Main St.
1901 Doucett, Frederick Luke...East Weymouth (Weymouth).
1905 Douglas, Archibald John...Westfield. 38 Elm St.
1865 Douglass, John Abbott †1906 Amesbury. 167 Main St.
1899 Dow, David Crooker.......Cambridge. 6 Hilliard St.
1887 Dow, Edmund Scott.......Allston (Boston). 18 Harvard Av.
1911 Dow, Frank Edward.......Northampton. 16 Center St.
1897 Dow, George Farwell......Reading. 20 Woburn St.
1882 Dow, George William......Lawrence. 80 East Haverhill St.
1871 Dow, James Arthur †1913 Belmont. Payson Rd.
1914 Dowling, John Joseph......Boston. City Hospital.
1895 Downey, Charles John.....Springfield. 156 Main St.
1908 Downey, Henry Arthur....Mittineague (West Springfield). 388 Westfield St.
1906 Downing, Andrew Francis..Cambridge. 501 Huron Av.
1904 Downing, Charles Harland.Everett. 59 Corey St.
1897 Downing, Franklin Chace..Lanesborough.
1909 Drake, Richard Alvin......West Medford (Medford). 6 Irving St.
1883 Drake, William Abram.....North Weymouth (Weymouth).
1901 Draper, Alexis Lumb......Dorchester (Boston). 1107 Washington St.
1885 Drew, Charles Aaron......Worcester. City Hospital.
1904 Drew, Frederick Prescott..East Dedham (Dedham).
1895 Drew, Maria Emma........Atlantic (Quincy). 39 Newbury Av.
1902 Dreyfus, Edna Weil.......Brookline. 30 Amory St.
1865 Driver, Stephen William †1915 Cambridge. 5 Farwell Pl.
1897 Drohan, James Henry......Brockton. 204 Main St.
1888 Drummey, Nicholas Daniel.Dorchester (Boston). 533 Washington St.
1904 Drury, Dana Warren......Roxbury (Boston). Office, Boston. 407 Marlboro' St.
1906 Dubois, Eoline Church.....Springfield. 10 Chestnut St.
1901 Duckering, Florence West..Boston. 483 Beacon St.
1900 Duckering, William West...Dorchester (Boston). 2 Warner St.
1908 Ducy, William Dwyer......Brockton. 13 Clinton Av.
1894 Dudley, Augustus William..Cambridge. 1740 Mass. Av.
1891 Duff, John................Charlestown (Boston). 5 Dexter Row.
1886 Duggan, John Thomas.....Worcester. 226 Southbridge St.
1906 Dunbar, Francis Herbert..Mansfield. P. O. address Boston. 46 Cornhill.
1893 Dunbar, Frank Collins.....Roxbury (Boston). 9 Beethoven St.
1914 Dunham, Adeline Frances..Cambridge. 881 Mass. Av.
1913 Dunham, Harry Bartlett...Marion.
1894 Dunham, Henry Bristol....Glen Gardner, N. J. N. J. Sanatorium.
1903 Dunn, Charles Hunter.... Boston. 178 Marlboro' St.
1894 Dunn, Charles Stein.......Haverhill. 133 Main St.
1874 Dunn, William Aloysius...Boston. 139 Beacon St.
1913 Dunn, William Ambrose....Boston. 154 Richmond St.
1909 Dunphy, Henry Ambrose...Thorndike (Palmer).
1885 Durant, Charles Edwin....Haverhill. 105 Emerson St.
1879 Durell, Thomas Moulton...Somerville. 131 Highland Av.
1866 Durgin, Samuel Holmes....Duxbury. Millbrook P. O.
1867 Dutton, Charles............Wakefield. 33 Avon St.
1906 Dutton, Julius Maltby.....Westfield. 108 Elm St.

1902 Dutton, Richard...........Wakefield. 33 Avon St.
1890 Dwight, Edwin Welles.....Boston. 19 Pearl St.
1896 Dwight, Henry Leonard....San Diego, Calif. 1234 Weatherly St.
1879 Dwight, James............Falmouth. Office, Boston. 225 Beacon St.
1890 Dwyer, John Edward......Cambridge. 878 Mass. Av.
1911 Dwyer, John Edward, Jr...Cambridge. 878 Mass. Av.
1905 Dwyer, William Joseph....Cambridge. 118 Pearl St.
1882, 1904 Dyer, Ebenezer Alden...Whitman. 506 Washington St.

E

1884 Eames, George Franklin...Boston. 249 Newbury St.
1912 Earle, George Henry.......Boston. 1138 Boylston St.
1901 Eastman, Alexander Crane.Springfield. 6 Chestnut St.
1906 Eastman, Theodore Jewett.South Berwick, Me. Office, Boston. 71 Marlboro' St.
1900 Easton, Elwood Tracy.....Boston. 209 Newbury St.
1914 Eaton, Henry Douglas.....Stockbridge.
1906 Eaton, William Edward....U. S. Navy.
1879 Eaton, Wyllis Gilbert......Lowell. 417 Middlesex St.
1866 Eddy, George Stetson †1909..Newton. 73 Sargent St.
1861 Edes, Robert Thaxter †1912.Reading. Office, Boston. 419 Boylston St.
1913 Edsall, David Linn........Milton. Office, Boston. 80 Marlboro' St.
1867 Edson, Ptolemy O'Meara †1904 Roxbury (Boston). 36 Elm Hill Av.
1894 Edwards, William Lothrop.Boston. 33 Gloucester St.
1897 Egan, John Joseph.........Gloucester. 52 Pleasant St.
1906 Ehrenfried, Albert.........Boston. 362 Commonwealth Av.
1887 Ehrlich, Henry............Boston. 172 Commonwealth Av.
1913 Eisner, Maurice Soloman...Pittsfield. 86 North St.
1874 Ela, Walter †1914 Cambridge. 13 Ash St.
1907 Elder, Fred Orestes........Wakefield. 22 Chestnut St.
1885 Eldridge, David Gorham...Dorchester (Boston). 15 Monadnock St.
1906 Ellam, Herbert William....Gardner. 29 Parker St.
1914 Eliot, Henry Whitney......Belchertown.
1900 Elliot, Henry Libbey.......Salem. 84 Washington Sq.
1877 Elliot, John Wheelock.....Boston. 124 Beacon St.
1903 Elliott, Alfred.............Middleborough. Rock St.
1900 Elliott, Richard Andrew...Avon.
1873 Elliott, Russell Dunson....Boston. 154 Richmond St.
1908 Ellis, Arthur Henry........Greenfield. 317 Federal St.
1905 Ellis, Edward Keith.......Hyde Park (Boston). Office, Boston. 232 Clarendon St.
1880 Ellis, Frederic Warren.....Monson. Oak St.
1873 Ellis, George Livingstone †1913 Middleborough. 135 Center St.
1899 Ellis, William Raymond...Brookline. 116 Thorndike St.
1899 Ellsworth, Samuel Walker.Quincy. 18 Russell Pk.
1899 Ely, Richard Skinner......West Townsend (Townsend).
1913 Ely, Theodore Williams....Cambridge. Office, Boston. 374 Marlboro' St.
1903 Emerson, Benjamin Kendall Worcester. 37 Pearl St.
1873 Emerson, Edward Waldo...Concord. Lowell Road.
1899 Emerson, Ernest Benjamin.Bridgewater. State Farm.
1893 Emerson, Francis Patten...Brookline. Office, Boston. 520 Commonwealth Av.
1903 Emerson, George Edward..South Weymouth (Weymouth). Office, Boston. 543 Boylston St.
1893 Emerson, Herbert Clark....Springfield. 177 State St.
1911 Emerson, Nathaniel Waldo.Boston. 295 Commonwealth Av.
1900 Emerson, William Robie Patten Boston. 657 Boylston St.
1900 Emery, George Edwin......Worcester. 280 Lincoln St.
1909 Emery, William Campbell..Dorchester (Boston). 430 Columbia Road
1870 Emery, William Henry....Roxbury (Boston). 109 Warwick St.
1905 Emmons, Arthur Brewster, 2d Dover. Office, Boston. 86 Bay State Road.
1904 England, Albert Charles...Pittsfield. 124 North St.
1912 English, Martin Joseph....Boston. City Hospital. South Dept.
1888 Ensworth, William Howard.East Boston (Boston). 40 Princeton St.
1894 Erb, Theodore Charles.....Boston. 374 Marlboro' St.
1893 Ermentrout, Sallie Justina.Address unknown.
1881 Ernst, Harold Clarence....Jamaica Plain (Boston). Office, Roxbury (Boston). 240 Longwood Av.
1899 Estabrook, Charles Taylor..Worcester. 390 Main St.
1912 Eustis, Richard Spelman...Boston. 329 Beacon St.
1903 Evans, Albert..............Boston. 409 Marlboro' St.
1904 Evans, Miner Harlow Amos, Jr. Dorchester (Boston). Office, Boston. 138 Newbury St.
1867 Eveleth, Edward Smith †1908 East Gloucester (Gloucester). 20 Highland St.
1908 Eveleth, Samuel Chester...Marblehead. 137 Washington St.
1899 Everett, Eugene Ellsworth.Boston. 427 Marlboro' St.
1905 Everett, Frederick Luther..Springfield. 10 Chestnut St.
1880 Everett, Oliver Hurd......Worcester. 53 Pearl St.
1865 Everett, Willard Shepard †1905 Newton Upper Falls. 20 Summer St.
1900 Ewing, George Winburn...Middleton. Office, Peabody. 32 Main St.

F

1906 Fabyan, Marshal...........Boston. 379 Commonwealth Av.
1892 Fahey, James Charles.....Northampton. 136 Main St.
1899 Fair, John Francis........East Cambridge (Cambridge). 390 Cambridge St.
1901 Fair, Robert Patrick.......Boston. 481 Beacon St.
1899 Fairbanks, Arthur Willard.Brookline. Office, Boston. 591 Beacon St.
1897 Fales, Alonzo Cartland....Malden. 76 Pleasant St.
1912 Fallon, Joseph Francis.....Brookline. 1 Kendall St.
1891 Fallon, Michael Francis....Worcester. 390 Main St.
1880 Farlow, John Woodford....Boston. 234 Clarendon St.
1895 Farnham, John Marshall Willoughby Worcester. 58 Pleasant St.
1874 Farr, Edwin Lawson.......Roxbury (Boston). 3 Highland St.
1908 Farr, Irvin Harris..........Holyoke. 179 Chestnut St.
1894 Farrington, Leander Morton.Arlington Heights. 102 Florence Av.
1893 Faulkner, Herbert Kimball.Keene, N. H. 78 West St.
1891 Faulkner, William Edward.Boston. 290 Marlboro' St.
1905 Faunce, Calvin Barstow, Jr.Jamaica Plain (Boston). Office, Boston. 95 Newbury St.
1905 Faxon, Eudora Winifred...Wrentham. State School.
1892 Faxon, Eudora Meade †1912 Franklin. New Ray Block.
1907 Faxon, Nathaniel Wales...Stoughton. 4 Walnut Av.
1907 Faxon, William Otis........Stoughton. 4 Walnut Av.
1897 Fay, Frank Gleason........Worcester. 390 Main St.
1875 Fay, James Monroe.........Northampton. 71 King St.
1911 Fay, Joseph Henry.........Melrose. 6 West Emerson St.
1888 Fay, William Eastman.....Brookline. Office, Boston. 366 Commonwealth Av.
1904 Feeley, Charles Philip.....Cambridge. 1039 Mass. Av.
1914 Feeley, Walter Clarence....Cambridge. 265 Western Av.
1906 Felch, Carrie Innes........Boston. 355 Mass. Av.
1913 Felch, George Alfred.......Boston. 591 Tremont St.
1906 Felch, Lewis Perley........Boston. 355 Mass. Av.
1912 Fennelly, Daniel John.....Fall River. 52 Linden St.
1903 Fennessey, John Francis...Dorchester (Boston). 15 Adams St.
1905 Fenwick, George Benson...Chelsea. 259 Chestnut St.

1900 Ferguson, Edward Hugh...Wrentham. Franklin St.
1901 Ferguson, Robert Henry...East Orange, N. J. 9 North Munn Av.
1873 Fernald, Charles Augustus †1912 Boston. 1483 Washington St.
1903 Fernald, Guy Goodwin.....Concord Junction (Concord). Assabet Av.
1895 Fernald, Walter Elmore....Waverley (Belmont). P. O. Box 344.
1904 Ferrin, William Warren...Haverhill. 77 Emerson St.
1906 Field, Henry Martyn.......Norwood. 784 Washington St.
1884 Field, James Brainerd.....Lowell. 329 Westford St.
1904 Field, Martin Thomas......Salem. 23 Winter St.
1900 Finch, George Hardy.......Springfield. 310 Main St.
1907 Finegan, Daniel Joseph.....Gloucester. 83 Middle St.
1904 Finkelstein, Harry.........Boston. 342 Hanover St.
1912 Finkelstein, Nathan........Pittsfield. 86 North St.
1911 Finlayson, Alan Daniel....Warren, Pa. State Hosp.
1890 Finn, Edward William.....Dedham. 5 Franklin Sq.
1913 Finnegan, Francis Augustine Lowell. 10 East Merrimack St.
1913 Finnegan, Philip Joseph...Salem. 92½ Essex St.
1914 Finnerty, Charles William.Somerville. 761 Broadway.
1884 Finnigan, Patrick Joseph..Cambridge. 1412 Cambridge St.
1904 Fischbein, Louis...........Boston. 382 Newbury St.
1897 Fish, Ernest Clifford.......Melrose. 11 Wyoming Av.
1897 Fish, John Euclid.........Canton. Mass. Hospital School.
1904 Fish, Louis................Fitchburg. 25 Myrtle Av.
1873 Fisher, Chester Irving.....New York, N. Y., 1925 7th St.
1902 Fisher, Irving Jewell......West Newton (Newton). 79 Chestnut St.
1910 Fishman, Maurice..........Lowell. 40 Middlesex St.
1888 Fisk, Arthur Lyman.......New York, N. Y. 41 West 50th St.
1886 Fiske, Eustace Lincoln.....Fitchburg. 20 Prichard St.
1891 Fitz, George Wells.........Boston. P. O. address, Peconic, N. Y.
1913 Fitz, Reginald.............Boston. P. B. Brigham Hospital.
1898 Fitzgerald, Clara Pauline..Worcester. 137 Pleasant St.
1892 Fitzgerald, James Bernard.Boston. 393 Mass. Av.
1906 Fitzgerald, John Joseph...Haverhill. 111 Emerson St.
1903 Fitzpatrick, John Joseph...Charlestown (Boston). 50 High St.
1910 Fitz-Simmons, Henry Joseph Jamaica Plain (Boston). Office, Boston. 272 Newbury St.
1902 Flagg, Elisha.............Boston. 190 Commonwealth Av.
1909 Flagg, Harry Howard......Charlestown (Boston). 30 Elm St.
1913 Flaherty, Edward James...Tewksbury. State Infirmary.
1914 Fleet, William Ernest......Cambridge. 9 Columbia St.
1914 Fleming, Edward Rahn....Medford. 322 Boston Av.
1904 Fleming, Patrick Joseph...Cambridge. 411 Huron Av.
1903 Fleming, Peter Joseph.....Mattapan (Boston). 1258 Blue Hill Av.
1902
1909 Fletcher, Robert Swan....Oxford. Charlton St.
1893 Fletcher, Robert Whitney..South Boston (Boston). 783 Broadway.
1905 Flett, Penelope McNaughton.Waverley (Belmont).
1887 Flint, Omar Alpha †1914 Dracut Center (Dracut).
1882 Flood, Everett.............Palmer. Monson State Hospital.
1910 Flournoy, Thomas.........Pittsfield. 742 North St.
1905 Floyd, Cleaveland..........Boston. 246 Marlboro' St.
1893 Flynn, John Joseph........Pittsfield. 183 North St.
1902 Flynn, John Joseph........Worcester. 10 Grand St.
1883 Fogerty, William Clemmons.Worcester. 98 Chandler St.
1880 Fogg, Irving Sylvester.....Norwood. 767 Washington St.
1913 Foley, Thomas Brinsley....Boston. 85 Westland Av.
1894 Foley, Timothy John.......Worcester. 28 Portland St.
1892 Follett, Ammi Ward.......Somerville. 359 Medford St.
1910 Forbes, Alexander.........Milton. Harland St.
1898 Ford, John Francis........Roslindale (Boston). 8 Walter St.
1914 Forster, John Ferguson Cooke Holyoke. 277 Suffolk St.
1901 Forster, Robert William...Lawrence. 279 Broadway.
1895 Fosgate, Elmer Gilman....Ashburnham.
1883 Foskett, George Mason.....Worcester. Stark Rd.
1914 Foss, George Herbert......Springfield. 530 Summer St.
1909 Foss, Ralph Emery........Peabody. 97 Main St.
1884 Foster, Charles Chauncy...Cambridge. 8 Elmwood Av.
1904 Foster, Ellis Edwin........New Bedford. 271 Union St.
1883 Foster, Horace Kendall....Peabody. 2 Park St.
1890
1900 Fourtin, Edmund Randolph Peaslee Waltham. 54 Grant St.
1911 Fox, Michael Bernard......Worcester. 6 Coral St.
1887 Fox, William Yale.........Taunton. 26 Second St.
1894 Frame, Joseph.............Rockland. 39 Webster St.
1891 Francis, Carleton Shurtleff.Brookline. 26 Davis Av.
1887 Francis, George Hills......Brookline. 295 Walnut St.
1911 Frank, Morris.............Roxbury (Boston). 106 Humboldt Av.
1902 Franz, Adolph.............Holyoke. 266 Maple St.
1911 Fraser, Archibald McKay..Boston. 69 Newbury St.
1880 Fraser, John Chisholm.....East Weymouth. (Weymouth).
1913 Fraser, William Leslie.....Lynn. 812 Summer St.
1911 Frawley, William Thomas..Pittsfield. 184 North St.
1905 Freedman, Louis Mark.....Dorchester (Boston). Office, Boston. 419 Boylston St.
1894 Freeman, Franklin Willard..Lynnfield. P. O. Wakefield, R. F. D.
1900 French, Charles Ephraim..Lowell. 9 Central St.
1887 French, Charles Lindol....Clinton. 271 High St.
1893 French, George Henry.....Winthrop. 300 Pleasant St.
1892 French, John Marshall.....Milford. 2 South Main St.
1911 French, Ralph Winward...Fall River. 151 Rock St.
1914 Friedman, Benjamin.......Boston. 43 McLean St.
1901 Friedman, Leo Victor......Newton Center. Office, Boston. 425 Marlboro' St.
1910 Friedman, Nathan.........Boston. 1038 Washington St.
1897 Frost, Edward Clayton....Campello (Brockton). 68 Chestnut St.
1910 Frost, Henry Pinckney....Dorchester (Boston). State Hospital
1906 Frothingham, Channing, Jr..Boston. 395 Marlboro' St.
1887 Frye, Edmund Bailey......Boston. 21 Chestnut St.
1909 Fuller, Andrew Howard....Cushman (Amherst).
1903 Fuller, Charles Benjamin..Waltham. 826 Main St.
1890 Fuller, Daniel Hunt.......Philadelphia, Pa. 19th and Market Sts.
1907 Fuller, Ernest Page........Lawrence. 301 Essex St.
1894 Fuller, Frederick Henry....Walpole.
1892 Fuller, James Robert......Andover. 68 Central St.
1898 Fullerton, Walter Wilson..Brockton. 106 Main St.
1911 Funnell, Wilfred Goldwin..Cambridge. Office, Boston. 156 Huntington Av.
1911 Furcalow, Charles Lawrence Springfield. 591¾ Main St.

G

1905 Gabler, George Lewis......Holyoke. 149 Chestnut St.
1905 Gafney, Harry Dabol......Ware. 45 Main St.
1909 Gage, Arthur Tenney......Melrose Highl'ds (Melrose). 250 Franklin St.
1906 Gage, Fred Leon...........Lowell. 9 Central St.
1886 Gage, Homer..............Worcester. 72 Pearl St.
1884 Gage, James Arthur.......Lowell. 64 Central St.
1907 Gahan, Patrick Francis....Medford. 19 Washington St.
1891 Gale, George Washington...East Saugus (Saugus). 68 Lincoln Av.
1901 Gale, Harold Adams.......Winchester. Office, Boston. 111 Newbury St.
1906 Gallagher, John Henry Connaughton Chicopee. 105 Center St.
1912 Gallagher, Nicholas Ambrose Malden. 221 Highland Av.

1907 Gallagher, Thomas Morton.Newton. 34 Channing St.
1906 Galligan, Edward Joseph...Taunton. 10 North Pleasant St.
1882 Galligan, Eugene Thomas..Roxbury (Boston). 84 Warren St.
1888 Gallison, Ambrose John....Franklin. 259 Dean Av.
1910 Gallison, James Murry.....Boston. 407 Marlboro' St.
1893 Gallivan, William Joseph..South Boston (Boston). 743 Broadway.
1883 Galloupe, Charles William.Boston. 188 Commonwealth Av.
1904 Galvin, Augustus Hughes...Springfield. 423 Main St.
1901 Galvin, William...........Blackinton (Williamstown).
1887 Gannett, William Whitworth Boston. 274 Marlboro' St.
1903 Gardner, Archibald Robert.Lowell. 64 Central St.
1881 Gardner, Clarence Rhodolphus Northampton. 78 Main St.
1912 Gardner, Edwin Daniels...New Bedford. 57 Campbell St.
1900 Gardner, Harrie Milton....Cambridge. 128 Magazine St.
1913 Garipay, Ellsworth Peter..Lynn. 147 Franklin St.
1875 Garland, Albert Stone †1908 Gloucester. 18 Pleasant St.
1874 Garland, George Minot.....Boston. 227 Newbury St.
1905 Garland, Roy..............Gloucester. 17 Pleasant St.
1895 Gates, Ernest A...........Springfield. 49 North Main St.
1899 Gavin, John Harrison......Roxbury (Boston). 346 Dudley St.
1864 Gavin, Michael Freebern...South Boston (Boston). 546 Broadway.
1905 Gay, Clarence Bertram....Fitchburg. 47 Day St.
1903 Gay, Fritz Walter.........Malden. 105 Salem St.
1868 Gay, George Washington...Chestnut Hill (Newton). Office, Boston. 665 Boylston St.
1903 Gay, Herbert Seymour.....Boston. 1087 Boylston St.
1893 Gay, Warren Fisher.......Boston. 416 Marlboro' St.
1914 Gaylord, James Frederick..Springfield. 700 State St.
1902 Généreux, Joseph Olivier...Webster. 18 Main St.
1907 George, Ariel Wellington...Cambridge. Office, Boston. 259 Beacon St.
1897 George, Arthur Phillips....Haverhill. 143 Main St.
1908 George, Frank William....Worcester. 6 High St.
1908 George, Leslie Handlin.....Bradford (Haverhill). 118 Main St.
1911 Gerber, Isaac.............Providence, R. I. 259 Benefit St.
1901 Germain, Harry Homer....Boston. 416 Marlboro' St.
1882 Gerould, Joseph Bowditch..North Attleborough. 34 High St.
1896 1913 Gerstein, Maurice.......Roxbury (Boston). 493 Warren St.
1885 Getchell, Albert Colby.....Worcester. 6 Linden St.
1912 Ghoreyeb, Albert Alphonso Wood Boston. 483 Beacon St.
1886 Gibbs, Linnæus Victor †1907 Huntington.
1883 Gibbs, Locero Jackson.....Chicopee Falls (Chicopee). †1915 33 Broadway.
1907 Giblin, Francis Joseph.....Dorchester (Boston). 33 Adams St.
1909 Giddings, Harold Girard...Allston (Boston). Office, Boston. 28 Commonwealth Av.
1869 Gifford, Benjamin Dods †1913 Chatham. Cross St.
1886 Gifford, John Henry.......Fall River. 320 Rock St.
1908 Giguere, Alfred Joseph.....North Adams. 62 Summer St.
1887 Gilbert, John.............Fall River. 254 Locust St.
1898 Gilbert, Louis Whitmore....Brookline. 1402 Beacon St.
1906 Gile, Frank Herbert, Jr....Braintree. 420 Washington St.
1892 Gile, John Morton.........Hanover, N. H. 1 Maynard St.
1914 Gilfillan, Donald Robert...Worcester, State Asylum.
1888 Gillard, Arthur Ernest.....Lowell. 32 John St.

1905 Gillis, John Ewen.........West Somerville (Somerville). 1097 Broadway.
1906 Gilman, Charles Sleeper...Brookline. Office, Boston. 419 Boylston St.
1872 Gilman, Eugene Albert †1907 Dorchester (Boston). 677 Dudley St.
1909 Gilman, Florence..........Northampton. 33 Elm St.
1887 Gilman, Warren Randall...Worcester. 10 Oxford St.
1906 Gilpatrick, Roy Hawkes....Boston. 1069 Boylston St.
1878 Ginn, David Richard......Dennisport (Dennis).
1906 Giroux, Charles...........Three Rivers (Palmer).
1906 Glass, James..............Framingham. 61 Concord St.
1896 Glendenning, Robert Thompson Manchester. 8 Church St.
1912 Glunts, David.............Roxbury (Boston). 165 Harold St.
1898 Goddard, Henry Edward...Brockton. 21 Goddard Rd.
1906 Goddard, Samuel Warren..Brockton. 21 Goddard Rd.
1905 Goddu, Louis Adalore Oliver Boston. 407 Marlboro' St.
1914 Godfrey, Henry White.....Auburndale (Newton). 14 Hancock St.
1901 Godfrey, Joseph Witter....Swampscott. Office, Lynn. 209 Union St.
1904 Godfrey, Thomas Francis..Springfield. 104 Union St.
1900 Golden, Lazarus...........Boston. 69 Chambers St.
1906 Goldsbury, Paul Williams..Warwick.
1888 Goldthwait, Joel Ernest....Boston. 372 Marlboro' St.
1893 Goldthwaite, Seth Vale †1914 Boston. 532 Mass. Av.
1906 Good, Frederick Leo.......Brookline. Office, Boston. 95 Newbury St.
1892 Goodale, Joseph Lincoln...Boston. 258 Beacon St.
1904 Goodall, Harry Winfred...Boston. 205 Beacon St.
1881 Goodell, George Zina.......Salem. 62 Federal St.
1906 Goodell, William...........Springfield. 6 Chestnut St.
1890 Goodman, Samuel..........Roxbury (Boston). 148 Townsend St.
1902 Goodridge, Frederick James.Cambridge. 5 Appian Way
1892 Goodwin, James Joseph....Clinton. 202 Church St.
1861 1885 Goodwin, Richard James Plummer †1903 Malden. 481 Pleasant St.
1910 Gookin, Edward Richard...Dorchester (Boston). 801 Columbia Road.
1871 Gordon, John Alexander...Quincy. 1200 Hancock St.
1896 Gordon, Stephen Masury...Fall River. 318 Prospect St.
1905 1910 Gorham, George Hartley West Roxbury (Boston). 14 Hastings St.
1896 Goss, Arthur Vincent......Taunton. State Hospital.
1869 Goss, Francis Webster.....Sacramento, Calif. 1014 Yardley Av.
1907 Gould, Chester Harlow....Braintree. 400 Washington St.
1888 Gould, Clarke Storer.......Norwood. 486 Washington St.
1899 Grady, Patrick Anthony Salmon Clinton. 104 School St.
1913 Grady, Thomas Francis....Lynn. 540 Summer St.
1873 Graham, Douglas..........Brookline. Office, Boston. Hotel Brunswick
1910 Graham, Jay Percy.........Springfield. 137½ State St.
1911 Grainger, Edward John....Winthrop. 304 Winthrop St.
1882 Grainger, William Henry..East Boston (Boston). 408 Meridian St.
1901 Grandison, Wilfred George.Charlestown (Boston). 65 High St.
1903 Granger, Frank Butler.....Boston. 591 Beacon St.
1882 Granger, Frank Clark......Randolph.
1893 Granger, Karle Henry.....South Weymouth (Weymouth).
1910 Granstein, Charles Israel..Brockton. 31 W. Elm St.
1895 Grant, James Henry.......Lynn. 148 South Common St.
1896 Grant, William Herbert....Boston. 293 Newbury St.
1904 Grant, William Victor.....Lawrence. 253 Essex St.
1905 Graves, Benjamin Augustus Dorchester (Boston). 178 Bowdoin St.
1904 Graves, Robert John.......Concord, N. H. 3 North State St.
1901 Graves, William Phillips...Boston. 244 Marlboro' St.

1901 Gray, Alice Maud.........Roxbury (Boston). 2 St. James St.
1896 Gray, Elizabeth Taylor....Roxbury (Boston). 2 St. James St.
1891 Gray, George Henry.......Lynn. 11 Lynn Shore Drive.
1914 Greeley, Hugh Payne......Boston. 355 Marlboro' St.
1877 Green, Charles Montraville.Boston. 78 Marlboro' St.
1868 Green, John Orne . †1912 Boston. 267 Newbury St.
1906 Green, Robert Montraville..Boston. 78 Marlboro' St.
1855 Green, Samuel Abbott †1901 Boston. 1154 Boylston St.
1901 Greene, Daniel Crosby, Jr..Boston. 483 Beacon St.
1887 Greene, Edward Miller.....Boston. 45 Chestnut St.
1904 Greene, Ransom Alphonso..Palmer. Monson State Hospital.
1887 Greene, Ray Woodville.....Worcester. 21 West St.
1895 Greene, Thomas Francis...Roxbury (Boston). 322 Warren St.
1896 Greene, William Henry....Roxbury (Boston). 322 Warren St.
1871 Greenleaf, John Ruggles †1908 Gardner. 42 Chestnut St.
1900 Greenough, Clara Mary....Greenfield. 17½ Federal St.
1898 Greenough, Robert Battey..Boston. 10 Gloucester St.
1888 Greenwood, Allen..........Wellesley Hills. Office, Boston. 101 Newbury St.
1905 Greenwood, Arthur Moses..Marblehead. 69 Pleasant St.
1881 Greenwood, Sewell Elliot..Templeton.
1907 Gregg, Donald.............Brookline. 701 Boylston St.
1884 Griffin, Arthur George.....Malden. 195 Pleasant St.
1903 Griffin, Walter Alden......Sharon.
1904 Grimes, Loring............Swampscott. 129 Burrill St.
1896 Griswold, Merton Lyman...Uxbridge. South Main St.
1893 Grouard, John Shackford..Nantucket.
1904 Grover, Arthur Leon.......Iowa City, Iowa. College of Medicine.
1914 Grover, Joseph Isaac......Mattapan (Boston). 1329 Blue Hill Av.
1883 Gruver, Samuel James.....Brockton. 106 Main St.
1912 Guild, Bruno Thurber.....Shelburne Falls (Shelburne).
1887 Guild, Edgar Hunt.........Springfield. 137½ State St.
1910 Guild, Edward Frank......Chelsea. 9 Crescent Av.
1909 Guild, Frederick Washburn.Grafton. South St.
1896 Guild, Thomas Ezra.......Mattapan (Boston). 1550 Blue Hill Av.
1914 Gunter, Fred Clarke.......Somerville. 141 Walnut St.
1913 Guthrie, Andrew Doherty..Roxbury (Boston). 41 Langdon St.
1914 Gwinnell, Alfred Weston...Brighton (Boston). 558 Washington St.
1914 Gwynne, Samuel Carlton...Worcester. 346 Grafton St.

H

1905 Haché, Henry Clement.....Somerville. 464 Broadway.
1879 Haddock, Charles Whitney.Beverly. 156 Cabot St.
1904 Hagen-Bürger, Gottfried Leonhard Havana, Cuba.
1911 Hagerty, Harry John......Worcester. 894 Millbury St.
1911 Hagerty, Joseph James....Norwood. 699 Washington St.
1911 Hagopian, Levon George...Lynn. 341 Washington St.
1885 Hahn, Albert Johann......Pattenburg, N. J.
1911 Haigh, Gilbert William....Worcester. 189 West Boylston St.
1900 Haines, Ignatius..........Boston. 178 Devonshire St.
1911 Hall, Gardner Wells.......Boston. 475 Beacon St.
1877 Hall, Harry Porter........Leominster. 70 West St.
1896 Hall, Herbert James.......Marblehead. Devereux Mansion.
1903 Hall, John Baptiste, Jr....Roxbury (Boston). 60 Windsor St.
1902 Hall, Walter Davis........Port Clyde, Me.
1885 Hall, William Dudley......Boston. 416 Marlboro' St.
1897 Hallett, Edward Bangs....Gloucester. 63 Middle St.
1906 Halligan, Edward Maurice.Reading. 18 Salem St.
1910 Hallisey, Joseph Edward..Dorchester (Boston). 691 Columbia Road.
1881 Halloran, Michael Joseph...Worcester. 42 Green St.
1898 Halloran, Timothy Joseph..Lowell. 10 East Merrimack St.
1890 Halpin, Andrew James.....Lowell. 22 Central St.
1906 Halsall, Mary Elizabeth...East Boston (Boston). 1024 Bennington St.
1912 Hamblen, Edward Everett.Bedford.
1912 Hamblen, Howard..........Maynard. Walnut St.
1914 Hamblet, Mary Lucia......Wallum, R. I.
1908 Hamilton, Albert John Adams Boston. 69 Newbury St.
1899 Hamilton, Annie Lee.......Boston. 15 Blagden St.
1912 Hamilton, Burton Everett..West Roxbury (Boston) 152 Park St.
1905 Hamilton, Robert DeLancey Newburyport. 210 High St.
1906 Hammond, Charles.........Hanover. Washington St.
1893 Hammond, Philip..........Winchester. Office, Boston. 483 Beacon St.
1899 Hammond, William John...Dorchester (Boston). 405 Washington St.
1875 Hammond, William Penn..Charlestown (Boston). 47 Monument Sq.
1906 Hancock, Albert William..Lawrence. 332 Broadway.
1911 Handy, Harrie Delmar.....Harwich. 18 Parallel St.
1899 Handy, Harry Tucker......Scituate Center.
1914 Hanifan, John Francis.....Holyoke. 284 Maple St.
1895 Hanley, Francis Joseph....Whitman. 21 Whitman Av.
1895 1911 } Hanley, John Joseph.... { Motherwell, Scotland. 56 Brandon St.
1914 Hanscom, Ridgely Fernald.Boston. 1083 Boylston St.
1869 Hanscom, Sanford..........Somerville. 1 Webster St.
1901 Hanson, Justus Greeley....Northampton. 219 Elm St.
1905 Hanson, William Clinton...Cambridge. Office, Boston. 144 State House.
1907 Hanson, William Thomas..Arlington. Office, Boston. 36 State House.
1901 Hapgood, Lyman Sawin....Cambridge. 6 Garden St.
1890 Harding, George Franklin..Boston. 419 Boylston St.
1912 Hardwick, Everett Vinton.Dorchester (Boston). 43 Algonquin St.
1906 Hardwick, Sydney Curtis..Quincy. 159 Elm St.
1888 Hare, Charles Henry.......Boston. 483 Beacon St.
1901 Harkins, John Francis.....Worcester. 11 Salem St.
1890 Harlow, Corydon Webster..Melrose Highl'ds (Melrose). 300 Franklin St.
1908 Harmer, Torr Wagner.....Boston. 192 Marlboro' St.
1901 Harriman, Charles Henry..Whitinsville (Northbridge). Church St.
1903 Harriman, Cora Elizabeth..Framingham. 15 High St.
1902 Harriman, David Eugene..Springfield. 21 Besse Pl.
1903 Harriman, Perley..........Lynn. 290 Summer St.
1907 Harrington, Clifton Ward..Everett. 545 Broadway.
1912 Harrington, Daniel James..Dorchester (Boston). 975 Dorchester Av.
1884 Harrington, Harriet Louise.Dorchester (Boston). 20 Monadnock St.
1903 Harrington, Michael William Indian Orchard (Springfield). Oak St.
1889 Harrington, Thomas Francis Boston. 310 Commonwealth Av.
1895 Harris, Arthur Eugene.....Lynn. 17 Chestnut St.
1898 Harris, Charles Edward....Hyannis (Barnstable). Main St.
1900 Harris, William DeBlois...Lynn. 96 South Common St.
1908 Harrison, Columbus William Boston. 35 Common St.
1906 Harrison, Henry...........Boston. 153 Huntington Av.
1884 Harrower, David..........Worcester. 9 Elm St.
1896 Hart, George Fred.........Webster. 17 Church St.
1900 Hart, Henry Brown........East Dennis (Dennis).
1901 Hart, Joseph Storer........South Lincoln (Lincoln).
1906 Hartman, Gustave.........Lynn. 177 North Common St.
1906 Hartnett, Edward Daniel...East Boston (Boston). 256 Bennington St.
1911 Hartnett, John Henry......Worcester. 9 Elm St.
1898 Hartung, Harry Hall......Boston. 224 Huntington Av.
1901 Hartwell, Arthur Spear....Norwood. 90 Winter St.
1902 Hartwell, Harry Fairbanks.Boston. 393 Beacon St.
1905 Hartwell, John Bryant....Boston. 260 Clarendon St.

1901 Hartwell, William Winn...Malden. 61 Washington St.
1898 Harvey, William Wirt.....Roxbury (Boston). 516 Warren St.
1893 Haskell, Henry Hill.......Auburndale (Newton). Office, Boston. 29 Commonwealth Av.
1891 Haskell, Nelson Cary......Amherst. 50 Main St.
1914 Haskins, Frank Eugene....Boston. 204 Huntington Av.
1881 Haskins, Solomon Foot....Cotuit (Barnstable). Ocean View Av.
1913 Haslam, Frank Alden......Allston (Boston). 1379 Commonwealth Av.
1893 Hassett, John Joseph......Lee. Main St.
1911 Hassett, Leonard Watson..Lynn. 586 Western Av.
1897 Hastings, John Mason.....Dorchester (Boston). 117 Stoughton St.
1882 Hastings, Judson Worthington Feeding Hills (Agawam).
1894 Hastings, Robert Worthington Brookline 45 Kilsyth Rd.
1907 Hatch, Ralph Augustus ...Brookline. Office, Boston. 308 Commonwealth Av.
1906 Hatch, Royal..............Wellesley. 572 Washington St.
1887 Hatchett, William Josephus.Somerville. 28 Arlington St.
1899 Hathaway, John Gael......New Bedford. 388 County St.
1878 Haven, Henry Cecil........Stockbridge. "Glenburnie."
1899 Haviland, Nathaniel Clark Bacon Worcester. 656 Main St.
1904 Haviland, Walter Childs...Worcester. 11 Elm St.
1900 Hawes, Alfred Taylor......Lynn. 85 North Common St.
1887 Hawes, Edward Everett....Barnstable. Office, Hyannis. Railroad Av.
1903 Hawes, John Bromham, 2nd.Boston. 29 Gloucester St.
1908 Hawkins, Henry...........Boston. 397 Marlboro' St.
1869 Hayden, David Hyslop †1914 Lynn. 40 Grosvenor Pk.
1898 Hayes, Albert Edwin......Providence, R. I. 128 Broad St.
1867 Hayes, Charles Cogswell †1890 Faribault, Minn. Brunswick Hotel.
1899 Hayes, Frederick Legro....Brookline. 12 Verndale St.
1905 Hayes, Justin Edward.....Northampton. 277 Main St.
1886 } 1893 } Hayes, Justin Gideon.....Williamsburg. Main St.
1870 Hayes, Stephen William...New Bedford. 61 Orchard St.
1903 Hayes, Wentworth Larrabee Cambridge. 381 Harvard St.
1914 Hayes, William Francis....Beverly. 377 Cabot St.
1901 Hayward, William Frank..East Brookfield (Brookfield).
1869 Hazleton, Isaac Hills †1906 Wellesley Hills (Wellesley).
1900 Heald, Charles Gerry......Pepperell. Main St.
1901 Healy, Daniel Laurence....Framingham. 54 Concord St.
1899 Healy, Thomas Raymond...Newburyport. 12 Charter St.
1883 Heath, Joseph Webster....Wakefield. 8 Avon St.
1900 Heaton, Thomas Henry....Cambridge. 315 Broadway.
1874 } 1894 } Hebbard, Ellery Cola..... Boston. 122 Huntington Av.
1905 Hedin, Carl Johan.........West Pownal, Me. Maine School for Feeble-Minded.
1906 Heffernan, David Aloysius.Boston. 69 Newbury St.
1911 Heffernan, Dennis William.Holliston. 185 Washington St.
1911 Hegerty, Joseph Gordon....Somerville. 339 Summer St.
1912 Hemeon, Frederick Chipman Dorchester (Boston). 9 Standish St.
1907 Henderson, Charles Russell.Reading. 74 Woburn St.
1911 Henderson, Francis Freeman Boston. 39 Newbury St.
1902 Henderson, George Dallas..Holyoke. 276 Maple St.
1912 Hendricks, Henning Vitalis..Traverse City, Mich. State Hospital.
1910 Hennelly, Thomas Patrick..Pittsfield. 184 North St.
1912 Hennessey, Thomas Francis.Lynn. 22 Mall St.
1909 Hennessey, William Warren Salem. 333 Essex St.
1885 Henry, John Goodrich......Winchendon. 15 Pleasant St.
1910 Hepburn, James Joseph....Boston. 536 Commonwealth Av.
1911 Hermann, Otto John.......Roxbury (Boston). Office, Boston. 522 Commonwealth Av.
1885 Herrick, Joseph Thomas...Springfield. 684 State St.
1880 Hersey, Freeman Clarke †1914 Boston. 405 Marlboro' St.
1911 Hersey, Harold Waters....Winchester. Office, Boston. Mass. Gen. Hosp.
1896 Hewes, Henry Fox.........Boston. 416 Marboro' St.
1882 Hewins, Parke Woodbury..Wellesley Hills. Office, Boston. 20 Beacon St.
1897 Hewitt, Clarence Elbert....Springfield. 796 State St.
1902 Hewitt, William Oakes.....Attleborough. 34 Sanford St.
1911 Heydemann, Martin........Boston. 1069 Boylston St.
1903 Hickey, John Joseph.......Peabody. 40 Main St.
1906 Hicks, George Henry.......Fall River 1973 South Main St.
1908 Higginbotham, Fred Augustus Watertown. 98 Mt. Auburn St.
1893 Higgins, Frank Albert.....Boston. 384 Commonwealth Av.
1914 Higgins, George Vincent...Randolph, Warren St.
1894 Higgins, James Haydyn....Union Village, Vt.
1868 Hildreth, John Lewis †1909..Winchester. 55 Fletcher St.
1878 Hill, Edgar Dwight........Plymouth. 27 Court St.
1896 Hill, George Hillard. ......Worcester. 15 High St.
1904 Hill, George Jackson.......Beverly. 548 Cabot St.
1901 Hill, George Sumner.......Boston. 295 Beacon St.
1886 Hill, Ira Clark............Springfield. 137½ State St.
1913 Hill, Lawrence Richardson.Pittsfield. House of Mercy Hospital.
1914 Hill, Lewis Webb..........Boston. 72 Pinckney St.
1904 Hill, Thomas Chittenden...Boston. 384 Commonwealth Av.
1903 Hillard, James Pearse.....Springfield. 354 Walnut St.
1901 Hills, Charles Everett.....South Natick (Natick).
1895 } 1898 } Hills, Frederick Lyman. { Bangor, Me. Eastern Maine Hospital.
1874 Hills, William Barker.....Brookline. Office, Boston. 19 Pearl St.
1914 Hilton, John Joseph Herron Lawrence. 336 Haverhill St.
1905 Hinchliffe, Frederick.......Cohasset. Main St.
1905 Hinchey, Richard..........Waltham. 17 Pine St.
1899 Hinckley, James William..Brookline. Office, Boston. 419 Boylston St.
1911 Hinds, Robert Watson.....Address unknown.
1913 Hinton, William Augustus.Cambridge. Office, Boston. Mass. Gen. Hospital.
1889 Hipkiss, George............Boston. 776 Beacon St.
1909 Hirsch, Henry Leon........Springfield. 172 Main St.
1882 } 1911 } Hitchcock, Edward........Boston. 32 State House.
1890 Hitchcock, Henry Russell..Plymouth. 36 Main St.
1895 Hitchcock, John Sawyer...Northampton. 160 Main St.
1900 Hixon, Edwin Colfax......Brookline. Office, Boston. 419 Boylston St.
1880 Hobbs, Ezra Allen †1911 Framingham. 40 Union Av.
1913 Hoberman, Samuel.........Malden. 217 Bryant St.
1907 Hoch, Theodore Augustus..Waverley (Belmont). McLean Hospital.
1882 Hodgdon, Andrew Hall....Dedham. 110 Maple Pl.
1903 Hodgdon, Ralph Franklin..Somerville. 107 Pearl St.
1894 Hodges, Almon Danforth...Roxbury (Boston). 2 St. James St.
1902 Hodskins, Morgan Brewster.Palmer. Monson State Hospital.
1898 Hogan, Joseph Ambrose....Lawrence. 537 Essex St.
1893 Hogner, Richard Per Gustaf Boston. 365 Mass. Av.
1907 Holt, Henry Ambrose......Holden. Phillips Rd.
1906 Hoitt, Charles Lewis.......Lynn. 83 Franklin St.
1883 Hoitt, Eugene Gorham.....Marlborough. 12 Howe St.
1902 Holbrook, Bradbury........Waltham. 802 Main St.

1910	Holbrook, Charles Albert	Haverhill. 50 Merrimack St.
1862	Holbrook, Silas Pinckney †1903	East Douglas (Douglas). 20 Pleasant St.
1882	Holden, Charles Sumner	Attleborough. 24 South Main St.
1889	Holden, Eugene Martin	New York, N. Y. 1 Madison Av.
1883	Holden, William Daniel	Haverhill. 74 Emerson St.
1897	Holland, Hubert Thomas	Jamaica Plain (Boston). 423 Center St.
1908	Hollings, Byam	Boston. Mass. Gen. Hosp.
1903	Holmberg, Carl Lester Magnus	Campello (Brockton). 1106 Main St.
1909	Holmes, Arthur Brewster	Kingston. Main St.
1913	Holmes, Daniel Henry	Middleborough. 15 School St.
1897	Holmes, Edgar Miller	Boston. 531 Beacon St.
1906	Holmes, George Winslow	Brookline. Office, Boston. 205 Beacon St.
1900	Holmes, Harry Bigelow	Adams. 37 Park St.
1902	Holmes, Howard Fowler	Tewksbury. State Infirmary.
1910	Holmes, John Franklin	Manchester, N. H. 951 Elm St.
1895	Holmes, May Salona	Worcester. Isolation Hospital.
1907	Holt, Charles Herbert	Pawtucket, R. I. 107 Mineral Spring Av.
1900	Holt, Frank Hammett	Boston. Boston City Hosp.
1883	Holyoke, Frank	Holyoke. 441 High St.
1914	Holzer, William Francis	Winchendon. 35 School St.
1904	Homans, John	Roxbury (Boston). Office, Boston. 164 Beacon St.
1911	Honeij, James Albert	Cambridge. 2 Avon St.
1897	Hood, Mary Gould	Newton Center (Newton). 9 Crescent Av.
1879	Hooker, Charles Parker	Springfield. 69 Chestnut St.
1909	Hoole, John Edward	Somerville. 385 Highland Av.
1900	Hopkins, Bertrand Hiram	Ayer. Washington St.
1895	Hopkins, Frederick Eugene	Springfield. 25 Harrison Av.
1912	Hopkins, John Wilson	Melrose. New Eng. Sanitarium.
1911	Hopkins, William Thorpe	Lynn. 7 Atlantic St.
1906	Hopkinson, George	Newton. Office, Boston. 419 Boylston St.
1906	Horne, Lester Wallace	Fairhaven. 32 Union St.
1914	Hornor, Albert Aurelius	Roxbury (Boston). 300 Longwood Av.
1914	Horsman, Hiram Lionel	Worcester. State Asylum.
1906	Hosley, Walter Alexis	Springfield. 145 Clarendon St.
1885	Hough, Garry de Nerville	New Bedford. 542 County St.
1906	Houghton, Richard Henry	East Boston (Boston). 308 Sumner St.
1914	Houghton, Niedhart Hahnemann	Boston. 220 Clarendon St.
1891	Houghton, Silas Arnold	Brookline. 14 Pleasant St.
1882	Houston, John Alexander	Northampton. State Hospital.
1908	Howard, Alonzo Gale	Boston. 636 Beacon St.
1882	Howard, Amasa	Chelmsford.
1911	Howard, Arthur Allison	Brookline. Office, Boston. 520 Commonwealth Av.
1898	Howard, Eugene Henry	Pittsfield. 246 North St.
1901	Howard, Frederic Hollis	Williamstown. 50 Spring St.
1885	Howard, Herbert Burr	Roxbury (Boston). Peter Bent Brigham Hospital.
1899	Howard, Joseph Francis	Lawrence. 6 Avon St.
1885	Howard, Margaret Emily Pagelsen	Roxbury (Boston). Peter Bent Brigham Hospital.
1908	Howe, George Plummer	Lawrence. 155 Haverhill St.
1904	Howe, Harry Newell	Greenfield. 4 Bank Row.
1899	Howe, Joseph Dimock	Pittsfield. 42 North St.
1876	Howe, Octavius Thorndike	Boston. 154 Beacon St.
1885	Howe, Oliver Hunt	Cohasset. Main St.
1898	Howe, Walter Clarke	Boston. 303 Beacon St.
1900	Howell, William Wescott	West Roxbury. Office, Boston. 279 Clarendon St.
1912	Howes, Frank Miller	Fairhaven. 84 Laurel St.
1909	Howland, Charles Abel	Fall River. 901 Second St.
1908	Howland, George Lewis	Jamaica Plain (Boston). 335 Center St.
1897	Howland, Joseph Briggs	Boston. Mass. Gen. Hospital.
1911	Hoyt, Perley Adelbert	Ludlow. North St.
1890	Hoyt, Walter Scott	Waltham. 104 Crescent St.
1909	Hubbard, Edward Dana	Gloucester. 96 Middle St.
1883	Hubbard, Frank Allen	Taunton. 157 High St.
1901	Hubbard, George William	Springfield. 327 State St.
1896	Hubbard, Joshua Clapp	Boston. 86 Bay State Rd.
1881	Hubbard, Josiah Clark	Holyoke. 243 Maple St.
1894	Hubbard, Osman Huntley	Gilsum, N. H.
1907	Hubbell, Adelbert Merton	Haverhill. 22 Merrimack St.
1895 1914	Hudnut, Frank Parker	New Bedford. 156 William St.
1911	Hudnut, Paul Albert	Chesterfield.
1896	Hughes, Laura Ann Cleophas	Boston. 98 Huntington Av.
1906	Hughes, Patrick James	Lawrence. 161 South Broadway.
1905	Hunt, Alice Elizabeth Palmer	Holyoke. 364 Maple St.
1897	Hunt, Daniel Lawrence	Boston. 293 Commonwealth Av.
1903	Hunt, Ernest Leroi	Worcester. 771 Main St.
1902	Hunt, George Eddy	Holyoke. 364 Maple St.
1902	Hunt, George Pratt	Pittsfield. 34 Fenn St.
1911	Hunt, Harold Otis	Newtonville (Newton). 424 Newtonville Av.
1878	Hunt, William Otis	Newtonville (Newton) 424 Newtonville Av.
1904	Hunt, Wilson Eugene	Malden. 88 Summer St.
1905	Hunter, Norman McLeod	Hudson. 20 Lincoln St.
1888	Hunting, Nathaniel Stevens	Quincy. 1136 Hancock St.
1908	Huntington, James Lincoln	Boston. 8 Gloucester St.
1876	Huntress, Leonard †1914	Lowell. 46 Fort Hill Av.
1900	Hurd, Albert Gordon	Millbury.
1899	Hurd, Randolph Campbell	Newburyport. 230 High St.
1888	Hurley, Daniel Bartholomew	East Boston (Boston). 42 Chelsea St.
1914	Hurley, Daniel Joseph	Charlestown (Boston). 24 Monument Av.
1906	Hurley, Edward Daniel	South Boston (Boston). Office, Boston. 419 Boylston St.
1903	Hurley, John Joseph	Boston. 362 Commonwealth Av.
1913	Hurley, Patrick Eugene	Holyoke. 109 Suffolk St.
1903	Hurwitz, Abraham Joseph	Boston. 34 Chambers St.
1905	Hussey, Edward John	Holyoke. 276 High St.
1891	Hutchings, Joseph Henry	Woburn. 514 Main St.
1909	Hutchins, Henry Talbot	Boston. 522 Commonwealth Av.
1895	Hutchinson, Charles Martin	Cambridge, 5 Garden St.
1895	Hutchinson, Cheesman Palmer	Auburndale (Newton). 88 Central St.
1901	Hutchinson, Walter Perkins	Abington.

I

1892	Ilsley, Frederick Roscoe	Medford. 69 Washington St
1909	Inglis, Harry James	Brookline. Office, Boston. 483 Beacon St.
1912	Ireson, Franklin Reynolds	Marblehead. 9 Prospect St.
1912	Irving, Frederick Carpenter	Boston. 96 Bay State Rd.
1914	Irwin, Gratton George	Holyoke. 589 Dwight St.
1897	Irwin, Vincent Joseph	Springfield. 351 Main St.

J

1887	Jack, Edwin Everett	Boston. 215 Beacon St.
1886	Jack, Ernest Sanford	Melrose. 56 West Emerson St.

1883 Jack, Frederick Lafayette..Boston. 215 Beacon St.
1901 Jack, Lewis Harlow.......West Newton (Newton). 68 Chestnut St.
1899 Jackson, Alexander Washington Worcester. 136 Austin St.
1897 Jackson, Alton Atwell.....Everett. 512 Broadway.
1892 Jackson, Charles William..Monson. Main St.
1911 Jackson, Delbert Linscott..Boston. 362 Commonwealth Av.
1885 Jackson, Fred William.....Jefferson, Me.
1884 Jackson, Henry............Boston. 380 Marlboro' St.
1903 Jackson, Howard Bigelow..Melrose. 96 West Emerson St.
1891 Jackson, James Marsh.....Boston. 230 Beacon St.
1897 Jackson, Oliver Howard....Fall River. 34 North Main St.
1892 Jackson, Ralph Wentworth.Fall River. 251 Cherry St.
1880 Jackson, William Benjamin.Lowell. 329 High St.
1911 Jacques, Hector............Fitchburg. 145 Water St.
1913 Jakmauh, Paul John......South Boston (Boston). 509 East 8th St.
1906 Janes, Arthur Percy.......Boston. 27 Hancock St.
1908 Janes, Benjamin Franklin, Jr. Northampton. 160 Main St.
1898 Janes, George Herbert.....Westfield. 5 Court St.
1913 Jantzen, Francis Thomas...Boston. Relief Station. Haymarket Sq.
1880 Jaques, Henry Percy.......Lenox. "Home Farm."
1884 Jarvis, William Furness...Waltham. 326 Lexington St.
1857 Jeffries, Benjamin Joy †1913 Boston. 15 Chestnut St.
1890 Jelly, Arthur Carlton......Boston. 10 Arlington St.
1883 Jenkins, Charles Edwin....Lynn. 10 Ireson St.
1890 1906 } Jenness, Burt Franklin...U. S. Navy.
1905 Jennings, Curtis Herman...Fitchburg. 201 Mechanic St.
1912 Jessaman, Leon Webster...Framingham. 30 Hollis St.
1887 Jillson, Franklin Campbell.West Roxbury (Boston). 11 Hastings St.
1913 Johnson, Alfred Emil, Jr...New York, N. Y. 684 St. Nicholas Av.
1901 Johnson, David Joseph.....Roxbury (Boston). 1 Schuyler St.
1907 Johnson, Erik St. John...New Bedford. 271 Union St.
1884 Johnson, Francis Emerson.Erving.
1883 Johnson, Frank Mackie....Boston. 43 Tremont St.
1880 Johnson, Frederick William.Boston. 167 Newbury St.
1913 Johnson, Harold Abbott....Lynn. 70 Broad St.
1914 Johnson, Herbert Lewis....Hadley. Main St.
1892 1898 } Johnson, Herbert Shattuck.Malden. 9 Myrtle St.
1908 Johnson, John Birger Albert Lowell. 10 East Merrimack St.
1894 Johnson, Mary Williamina Lougee Brookline. 45 Wolcott Road.
1894 Johnson, Orville Edson....Winthrop. 123 Winthrop St.
1903 Johnson, Peer Prescott.....Beverly. 15 Washington St.
1901 Johnson, Walter Sydney...Los Angeles, Cal. 303-304 W. P. Story Bldg.
1883 Johnson, William Augustus.Lowell. 160 Merrimack St.
1878 Johnson, William Louis....Uxbridge. Main St.
1911 Johnston, Clyde Clifford...Springfield. 268 Central St.
1908 Johnston, William.........Dorchester (Boston). 206 Norfolk St.
1890 Jones, Charles David......Malden. Office, Boston. 137 Newbury St.
1897 Jones, Daniel Fiske........Boston. 195 Beacon St.
1891 Jones, Elgin Wilbur........Lynn. 44 Atlantic St.
1907 Jones, Everett.............Brookline. Office, Boston. 419 Boylston St.
1897 Jones, Frederick Ellis.....Quincy. 1569 Hancock St.
1905 Jones, Frederick Elmer...Brookline. Office, Roxbury. (Boston). 507 Warren St.
1887 Jones, Gilbert Norris......Wellesley Hills (Wellesley).
1908 Jones, James Ambrose.....Lynn. 173 North Common St.
1897 Jones, John Clarke........Brookline. 56 Hawes St.
1892 Jones, Lombard Carter.....Falmouth.
1892 Jones, Lyman Asa.........North Adams. 141 Church St.
1898 Jones, Mary Scott.........Boston. 82 St. Stephen St.
1903 Jones, Raymond Child.....Fitchburg. 4 Ashburnham St.
1911 Jones, Robert Le Roy.....Lowell. 219 Central St.
1905 Jones, Wellington West....Housatonic (Great Barrington). 41 Main St.
1893 Jones, William Marks.....Lowell. 145 Merrimack St.
1859 Jordan, Charles.....†1895 Wakefield. 9 Jordan Av.
1911 Jordan, Ernest Major......Boston. 502 Beacon St.
1873 Jordan, George Albert †1913 Worcester. 46 Myrtle St.
1905 Jordan, John Franklin.....Peabody. 77 Lynn St.
1894 Joslin, Elliott Proctor......Boston. 81 Bay State Rd.
1911 Joslyn, Arthur Everett..... Lynn. 211 Western Av.
1901 Jouett, Fred Robert.......Cambridge. 3 Garden St.
1906 1912 } Joyce, Thomas Francis...Lawrence. 296 Broadway.
1914 Judd, Ernest Hart.........Springfield. 685 State St.
1912 Judkins, Charles Louville Mason Lynn. 7 Mason St.
1891 Judkins, Frank Louville...Lynn. 7 Mason St.

K

1890 Kaan, George Warton.....Brookline. Office, Boston. 419 Boylston St.
1914 Kaplovitch, Henry.........Haverhill. 50 Merrimack St.
1904 Katsainos, George Michel..Boston. 106 Huntington Av.
1907 Kazanjian, Hampar Paul..Lawrence. 283 Essex St.
1889 Kean, Michael Edward....Manchester, N. H. 780 Elm St.
1903 Keaney, Henry Joseph.....Everett. 385 Broadway.
1913 Keany, Francis Joseph.....Boston. 73 Marlboro' St.
1901 Kearney, John Henry......Fitchburg. 80 Wallace St.
1909 Kearney, Joseph Patrick...Lowell. 10 East Merrimack St.
1886 Keefe, Daniel Edward.....Springfield. 127 Main St.
1880 1902 } Keefe, Patrick Henry...{ Providence, R. I. 257 Benefit St.
1889 Keegan, Charles Andrew...Arlington. 734 Mass. Av.
1906 1911 } Keeler, William Basil...{ Roxbury (Boston). 470 Warren St.
1902 1914 } Keenan, George Francis..Boston. 520 Beacon St.
1897 Keenan, Herbert John.....South Boston (Boston). 254 Broadway.
1910 Keever, Henry Floyd.......Auburndale (Newton). 258 Melrose St.
1904 Keith, Halbert Lynn.......Milford. 255 Main St.
1884 Keith, Wallace Cushing....Brockton. 237 North Main St.
1892 Keleher, William Henry...Woburn. 48 Pleasant St.
1910 Kelleher, Jeremiah Edward.Haverhill. 170 Winter St.
1896 Kelleher, Patrick Francis..Cambridge. 1713 Mass. Av.
1912 Kelley, Clarence Moore.....Westminster.
1914 Kelley, Edward Joseph....Watertown. 218 Main St.
1903 Kelley, Joseph Henry Hart Dorchester (Boston). The Peabody. Peabody Sq.
1914 Kelley, Lawrence Kendall..Peabody. 15 Chestnut St.
1914 Kelley, Robert Edward Stack Mattapan (Boston). 249 River St.
1874 Kelley, Seth Wight †1914 Woburn. 7 Winn St.
1883 Kellogg, Edward Brinley...Boston. 854 Beacon St.
1912 Kellogg, Foster Standish...Boston. 96 Bay State Rd.
1892 1899 } Kellogg, Frederick Leroy.{ Boston. 366 Commonwealth Av.
1908 Kelly, John Michael.......Dorchester (Boston). 182 Bowdoin St.
1901 Kelly, Michael.............Fall River. 225 Third St.
1893 Kelly, William P...........Pittsfield. 61 Union St.
1913 Kemp, Howard Martin.....Turner's Falls (Montague). 129 Avenue A.
1913 Kendricken, Joseph Thomas Dorchester (Boston). 938 Dorchester Av.
1895 1902 } Kennard, Harry Delano...Peabody. 84 Main St.

1877	Kennealy, John Henry	Brookline. Office, Roxbury (Boston). 1570 Tremont St.
1898	Kennedy, Alexander Gladstone	Boston. 1075 Boylston St.
1905	Kennedy, Edward Anthony	Great Barrington. 314 Main St.
1901	Kennelly, Julia Grice	Cambridge. Kennedy Rd.
1913	Kenney, Clarence Bronson	State Farm (Bridgewater).
1884	Kenney, John Erle	Chelsea. 119 Hawthorn St.
1909	Kenney, Thomas Francis	Worcester. 9 High St.
1905	Kenney, Walter Clement	Winchendon. 22 Walnut St.
1909	Kennison, Frederick Marshman	Holbrook. 93 North Franklin St.
1907	Kent, Bradford	Dorchester (Boston). 798 Blue Hill Av.
1905	Kent, Ralph Porter	Attleborough. 27 South Main St.
1914	Kenworthy, Marion Edwena	Gardner. State Colony.
1883	Kenyon, Henry Jesse	Worcester. 84 Pleasant St.
1900	Kepler, Charles Ober	Boston. 362 Commonwealth Av.
1904	Kerr, Isabella Dickieson	Boston. 821 Beacon St.
1911	Kerrigan, Joseph Henry	Stoneham. 66 Central St.
1909	Kickham, Charles Joseph	Brookline. Office, Boston. 483 Beacon St.
1908	Kilbourn, Arthur Goss	Groton. Main St.
1884	Kilburn, Henry Whitman	Boston. 192 Marlboro' St.
1913	Kilburn, Ira Nelson	Holyoke. 180 Chestnut St.
1877	Kilby, Henry Sherman	North Attleborough. 98 Church St.
1914	Killam, Franklin Harrington	Medford. 326 Boston Av.
1914	Killelea, Edward Vincent	Fitchburg. 5 Day St.
1890	Kilroy, Philip	Springfield. 61 Chestnut St.
1879	Kimball, William George	Huntington.
1905	Kimpton, Arthur Ronald	Allston (Boston). Office, Boston. 86 Bay State Rd.
1909	King, Frederick Augustine	Boston. 357 Mass. Av.
1910	King, George Clifford	Fall River. 57 Rock St.
1898	King, Myron Louis	Cambridge. 788 Mass. Ave.
1888	King, Nathaniel Clark	Campello (Brockton). 1147 South Main St.
1910	King, Nicholas James Quan	Roslindale (Boston). 49 Florence St.
1881	Kingman, Rufus Anderson	Brookline Office, Boston. 366 Commonwealth Av.
1875	Kingsbury, Albert Dexter †1913	Needham.
1906	Kingsbury, Walter Warren	Malden. 179 Ferry St.
1905	Kingsley, Patrick Joseph	Dorchester (Boston). 5 Adams St.
1904	Kinloch, Raymond Alexander	Springfield. 83 Walnut St.
1914	Kinne, George Lyman	Holyoke. 285 Maple St.
1900	Kinney, William D'Arcy	Osterville (Barnstable).
1908	Kinnicutt, Roger	Worcester. 72 Cedar St.
1904	Kirby, Holder Crary	New Bedford. 33 South Sixth St.
1904	Kirby, James Richard	Clinton. 181 Chestnut St.
1907	Kirkpatrick, George Holland	Lynn. 192 South Common St.
1910	Kissock, Robert James	Boston. 483 Beacon St.
1898	Kite, Walter Chester	Milton. 17 Russell St.
1880	Kittredge, Joseph	Brookline. 69 Cypress St.
1874	Kittredge, Thomas	Salem. 13 Chestnut St.
1908	Klein, Isaac	Boston. 1043 Washington St.
1914	Kline, George Milton	Hathorne (Danvers).
1881	Knapp, Philip Coombs	Boston. 535 Beacon St.
1899	Knight, Charles Eugene	Rockland. 29 Church St.
1902	Knight, Charles Lewis	West Roxbury (Boston). Office, Boston 544 Columbus Av.
1902	Knight, Charles Sumner	Westborough. 54 West Main St.
1896	Knight, Marcus Whitney	Milford. 8 West St.
1889	Knowles, James Harris	Gloucester. 2½ Highland St.
1884	Knowles, William Fletcher	West Newton. Office, Boston. 220 Clarendon St.
1892	Knowlton, Charles Davison	Roxbury (Boston). 574 Warren St.
1910	Knowlton, Edward Allen	Holyoke. 227 Maple St.
1892	Knowlton, Herbert Eugene	National City, Calif.
1903	Knowlton, Wallace Miles	Boston. 462 Boylston St.
1901	Knowlton, William Thomas	Hubbardston. Barre Rd.
1911	Knudson, Mette Marie	West Roxbury (Boston). 78 Park St.
1903	Konikow-Bucholz, Antoinette Frederica	Malden. 103 Bryant St.
1894	Konikow, Moses Joseph	Roxbury (Boston). 486 Warren St.
1901	Kurth, Gustave Emil	Lawrence. 86 East Haverhill St.

L

1909	Lachance, Alfred Philias	Gardner. 142 Parker St.
1900	Ladd, Maynard	Boston. 270 Clarendon St.
1907	Ladd, William Edwards	Boston. 42 Gloucester St.
1911	La Fortune, Wilfrid Teller	Fitchburg. 128 Fairmount St.
1906	Lahey, Francis Howard	Boston. 638 Beacon St.
1899	Laighton, Florence Marion	New York, N. Y. 33 West 96th St.
1914	Lally, William James	Pittsfield. 184 North St.
1892	LaMarche, Walter Joseph	Cambridge. 1038 Mass. Av.
1901	Lambert, Fred De Forest	Tyngsborough.
1901	Lambert, John Henry	Lowell. 202 Merrimack St.
1912	LaMoure, Charles Ten Eyck	Lakeville, Conn. Conn. School for Imbeciles.
1894	Lamoureux, Joseph Elzear	Lowell. 710 Merrimack St.
1892	Lancaster, Sherman Russell	Cambridge. 27 William St.
1891	Lancaster, Walter Brackett	Sherborn. Office, Boston. 522 Commonwealth Av.
1880	Lane Albert Clarence	Woburn. 42 Pleasant St.
1909	Lane, Clarence Guy	Woburn. 36 Pleasant St.
1914	Lane, Clifton Rogers	Fitchburg. Burbank Hospital.
1884	Lane, Edward Binney	Jamaica Plain (Boston). Office, Boston. 419 Boylston St.
1894	Lane, Francis Augustus	East Lynn (Lynn). 29 Lakeview Av.
1905	Lane, John William	Dorchester (Boston). Office, Boston. 520 Beacon St.
1900	Lane, Walter Appleton	Milton. 173 School St.
1904	Lang, Herbert Bowman	South Hadley.
1896	Langlois, Joseph Augustus	Pittsfield. 54 Bradford St.
1908	Langnecker, Harry Leslie	Cambridge. Office, Boston. 8 Marlboro' St.
1907	Lanpher, Howard Arthur	Chester.
1913	La Rochelle, Fred Désiré	Springfield. 508 Main St.
1905	Larrabee, Herbert Manson	Tewksbury. Main St.
1897	Larrabee, Ralph Clinton	Boston. 520 Commonwealth Av.
1911	Laskey, Edward Philip	Haverhill. 94 Emerson St.
1899	Latham, Benoni Mowry	Mansfield. 10 North Main St.
1876	Lathrop, William Henry †1905	Lowell. 21 First St.
1910	Laton, George Peavey	Salem, N. H. Main St.
1898	Lavalée, George Omer	Lowell. 790 Merrimack St.
1872	LaVigne, Alfred Willis †1913	Lowell. 173 Merrimack St.
1906	Law, Katharine Hayes	Erie, Pa. 247 West 8th St.
1888	Lawler, William Patrick	Lowell. 53 Central St.
1914	Lawley, Brace Irving	Arlington. 177 Mass. Av.
1907	Lawlor, Edward Francis	Lawrence. 94 Bennington St.
1906	Lawlor, Richard Henry	Methuen. 251 Broadway.
1911	Lawrence, Charles Henry, Jr.	Brookline. Office, Boston. 374 Marlboro' St.
1896	Lawrence, James Wilmot	Malden. 25 Washington St.
1897	Lawrence, Joseph Henry	Brockton. 23 Main St.
1899	Lawrence, Nellie Louise	Boston. 425 Marlboro' St.
1873	Lawrence, Robert Means †1912	Boston. 177 Bay State Rd.

1907 Laws, Sophie Goudge......Spartanburg, S. C. Converse College.
1894 Leach, Edward Mortimer..Rochdale (Leicester).
1893 Leach, Horace Morton †1911 Rochdale (Leicester).
1892 Leahey, George Henry Aloysius Lowell. 128 Merrimack St.
1893 Leahy, Thomas Joseph....Cambridge. 331 Broadway.
1895 Leard, John Samuel Hick..Jamaica Plain (Boston). 392 Arborway.
1887 Learned, William Turell...Fall River. 42 Franklin St.
1892 Learoyd, Charles Berry....Taunton. 2 Vine St.
1914 Leary, Alfred James.......Newton. 32 Channing St.
1905 Leary, Chrysostom John...New Bedford. 415 Pleasant St.
1901 Leary, Olga Cushing.......Jamaica Plain (Boston). 44 Burroughs St.
1913 Leary, Patrick Frank......Turner's Falls (Montague) 20 Prospect St.
1906 Leary, Timothy............Jamaica Plain (Boston). Office, Boston. 416 Huntington Av.
1897 Leary, William Charles....Springfield. 630 Main St.
1914 Leavitt, Peirce Henry.....Boston. City Hospital.
1865 Leavitt, William Whipple †1906 Pittsfield. 120 South St.
1909 LeBœuf, Alfred Thomas... Salem. 319 Lafayette St.
1910 Lee, Harry Jason..........Boston. 535 Beacon St.
1907 Lee, Roger Irving.........Cambridge. 4 Weld Hall.
1914 Lee, Wesley Terence.......Somerville. 281 Broadway.
1901 Leen, Thomas Francis.....Boston. 19 Bay State Rd.
1912 Leeper, Marion Eleanor....Northampton. 33 Elm St.
1900 Legg, Arthur Thornton.....Boston. 535 Beacon St.
1905 LeGro, Lester Burnside....Haverhill. 50 Merrimack St.
1911 Leland, Forrest LeRoy.....South Hadley Falls (South Hadley). 44 Bardwell St.
1877 Leland, George Adams.....Boston. 354 Commonwealth Av.
1912 Leland, George Adams, Jr..Boston. 354 Commonwealth Av.
1903 Lemaire, Willard Wallace.Worcester. 458 West Boylston St.
1908 Lemaire, William Franklin.East Lynn (Lynn). 134 Chestnut St.
1913 Lemay, Alfred Mederic....Lowell. Lowell Hospital.
1906 Lemieux, Theodule Alfred.Lawrence. 356 Haverhill St.
1913 Leonard, Ralph Davis.....Melrose. Office, Boston. 259 Beacon St.
1908 Leslie, Charles Thomas....Pittsfield. 86 North St.
1900 Leslie, Herbert Granville..Amesbury. 273 Main St.
1910 L'Esperance, Oscar Raŏul Talon Boston. 100 Boylston St.
1908 Lesses, Max...............Salem. 62 Washington Sq.
1904 Levins, Nathan Noah......Boston. 30 Chambers St.
1907 Levy, Felix Julius........Brookline. 1469 Beacon St.
1913 Lewandowski, Julia Mary.Holyoke. 97 High St.
1894 Lewis, Arthur Cuthbert....Fall River. 1018 North Main St.
1906 Lewis, Elisha Sears.......Princeton. Wachusett St.
1913 Lewis, Frank Edward.....Boston. City Hospital.
1906 Lewis, James Prince.......Waltham. Office, Boston. 543 Boylston St.
1914 Lewis, Seth Ames.........Springfield. 45 North Main St.
1897 Libby, Edward Norton.....Roxbury (Boston). Office, Boston. 638 Beacon St.
1893 Libby, Jesse Herbert......East Weymouth (Weymouth).
1899 Libby, Mary Gordon.......Newport, N. H.
1903 Libby, Mildred Augusta....Baldwinsville (Templeton)
1912 Liebman, William..........Boston. 1069 Boylston St.
1912 Lincoln, George Chandler..Worcester. 2 Linden St.
1889 Lincoln, Jacob Read.......Millbury.
1903 Lincoln Merrick...........Worcester. 2 Linden St.
1903 Lindquist, Carl Augustus..Boston. 24 Westland Av.
1897 Lindsay, Joseph Ira.......Worcester. 7 Oberlin St.
1904 } 1914 } Lindsey, John Hathaway. Fall River. 151 Rock St.
1905 Linenthal, Harry..........Roxbury (Boston). Office, Boston. 483 Beacon St.
1886 Linfield, Edward Porter...Avon.
1884 Litchfield, William Harvey.Brookline. 1378 Beacon St.
1902 Lithgow, Robert Alexander Douglas †1911 Boston. 43 Chestnut St.
1895 Little, Abby Noyes.........Newburyport. 22 Essex St.
1904 Little, John Mason, Jr.....Boston. 317 Dartmouth St.
1884 Little, William Brimblecom.Lynn. 13 Nahant St.
1898 } 1907 } Littlefield, George Curtis. { Webster. 23 East Main St.
1909 Littlefield, Marion Curtis...Bradford (Haverhill). Office Haverhill. 50 Merrimack St.
1893 Littlefield, Samuel Horace..Roxbury (Boston). 2 St. James St.
1909 Littlewood, Thomas........Pittsfield. 779 Tyler St.
1909 Liverpool, Coval Henry....West Somerville (Somerville). 325 Highland Av.
1900 Livingston, Clarence Bertram Lowell. 9 Central St.
1900 Livingston, Ernest George..Lowell. 10 East Merrimack St.
1906 Lloyd, Henry Demarest....Boston. 657 Boylston St.
1898 Lockary, Joseph Logue....Roxbury (Boston). 108 Warren St.
1903 Locke, Edwin Allen........Boston. 311 Beacon St.
1889 Lockhart, Joseph Smith....Cambridge. 837 Mass. Av.
1910 Loder, Halsey Beach.......Boston. 483 Beacon St.
1903 Loewe, Leonard Joseph....Haddam, Conn.
1897 Logan, Frank Barker Tays.Gloucester. 42 Middle St.
1902 Lord, Frederick Taylor....Boston. 305 Beacon St.
1896 Lord, Sidney Archer.......Cromwell, Conn. Cromwell Hall.
1897 Loring, Robert Gardner....Lincoln. Office, Boston. 10 Arlington St.
1876 Loring, Robert Pearmain..Newton Center (Newton). 19 Crescent Av.
1890 Lothrop, Howard Augustus.Boston. 101 Beacon St.
1909 Lothrop, Oliver Ames......Boston. 101 Beacon St.
1895 Lougee, Frank Taylor......Lynn. 11 Atlantic St.
1912 Lougee, George Woodworth.Lynn. 57 Estes St.
1910 Lougee, John Leroy........West Roxbury (Boston). Office, Boston. 514 Commonwealth Av.
1899 Lougee, William Wheeler..Malden. 195 Main St.
1897 Loughran, James Francis..Lowell. 219 Central St.
1872 Lovejoy, Charles Averill...Lynn. 64 Broad St.
1914 Lovek, Joseph Arthur......Lawrence. 147 Oak St.
1894 Lovell, Charles Dixon Smith Lynn. 128 South Common St.
1885 Lovell, Charles Edward....Whitman. South Av.
1894 Lovell, David Bigelow.....Worcester. 340 Main St.
1900 Lovell, Martha Eleanor....Allston (Boston). 52 Ashford St.
1884 Lovett, Robert Williamson.Boston. 234 Marlboro' St.
1903 Lowd, Harry Mosher.......Swampscott.
1886 Lowe, Fred Messenger.....West Newton (Newton). 1354 Washington St.
1901 Lowell, Albert Fay........Gardner. 20 Vernon St.
1898 Lowell, Alverne Percy.....Fitchburg. 52 Hartwell St.
1901 Lowell, Freeman Lamprey Boston. 2A Milford St.
1905 Lowell, William Holbrook.Winchester. Office, Boston 101 Newbury St.
1906 Lowney, Dennis Joseph. New Bedford. 1325 Acushnet Av.
1902 Lowney, John Francis.....Fall River. 755 Plymouth Av.
1910 Lucas, William Palmer....San Francisco, Calif. University Hospital.
1908 Luce, Dean Sherwood......Canton.
1913 Luce, LeRoy Alson........Boston. 394 Marlboro' St.
1898 Luchsinger, Harry Warner.Housatonic (Great Barrington). Main St.
1913 Luftig, Jacob.............Boston. 282 Columbus Av.
1891 Lund, Fred Bates.........Boston. 527 Beacon St.
1908 Lundwall, Laurence Svante Bernhard Gardner. 316 Central St.
1908 Lupien, Henry John.......Brockton. 63 Main St.
1890 Lussier, Charles Arthur...Worcester. 154 Grand St.
1913 Lyle, Eveline Burton......Brookline. 5 Winchester St.

1914	Lyman, Henry	Boston. 36 Commonwealth Av.
1907	Lyman, William Robinson	Worthington.
1899	Lynch, Charles Francis	Springfield. 317 Main St.
1903	Lynch, Cornelius Joseph	Quincy. 1620 Hancock St.
1908	Lynch, Daniel Lawrence	Roslindale (Boston). 100 Belgrade Av.
1913	Lynch, Henry Edmund	Holyoke. 240 Maple St.
1902	Lynch, Patrick Michael	Springfield. 39 Main St.
1911	Lynch, William Francis	Worcester. 20 Portland St.
1914	Lyons, George Aloysius	Lynn. 120 South Common St.
1896	Lyons, Joseph Benedict	Charlestown (Boston). 1 Dexter Row.

M

1889	MacArthur, George Elden	Ipswich. 45 Central St.
1913	MacAusland, Andrew Roy	Boston. 240 Newbury St.
1905	MacAusland, William Russell	Boston. 240 Newbury St.
1913	Macauley, Joseph Arthur	Dorchester (Boston). 612 Dudley St.
1907	MacCallum, Wallace Peter	Dorchester (Boston). Office, Boston. 214 Huntington Av.
1905	MacCormick, John Allan	Brookline. Office, Boston. 419 Boylston St.
1912	MacCorison, Carl Copeland	North Reading. State Sanatorium, P. O. North Wilmington.
1896	Macdonald, Alexander Ambrose	Dorchester (Boston). 119 Washington St.
1865	MacDonald, Archibald Elexis	Ontario, Calif.
1887	Macdonald, Colin William	Roxbury (Boston). 1 New Heath St.
1909	MacDonald, Donald Francis	Taunton. 10 White St.
1906	Macdonald, Frederick Cornelius	Roxbury (Boston). 544 Warren St.
1914	MacDonald, Frederick Livingstone	Waltham. 333 Moody St.
1913	Macdonald, John Bernard	Hathorne (Danvers). State Hospital.
1908	MacDonald, William Campbell	Malden. 538 Main St.
1865	Macdonald, William Lewis †1903	Wellesley Hills (Wellesley).
1908	Mace, Charles Herbert	Huntington.
1913	MacFadyen, John Alexander	Worcester. 118 Belmont St.
1901	MacKay, Edward Hart	Clinton. 92 Walnut St.
1898	MacKay, George Finlay	Dalton. 71 Main St.
1879	MacKeen, Alfred Atwater	Whitman. 29 Park Av.
1906	MacKerrow, Horace Gilford	Worcester. 96 Eastern Av.
1885	Mackie, Laura Viola Gustin	Attleborough. 157 Pleasant St.
1899	Mackie, William Charles	Brookline. 54 Coolidge St.
1905	MacKillop, Daniel	Cambridge. 307 Broadway.
1907	MacKinnon, Donald Lauchlin	Medford. Office, Boston. 8 Columbus Sq.
1914	MacKay, William Henry	Poughkeepsie, N. Y. Vassar Brothers Hospital.
1898	MacKnight, Adam Stephenson	Fall River. 355 North Main St.
1914	MacKnight, William Frank	Boston. 198 St. Botolph St.
1901	MacLennon, Angus Daniel	Boston. 654 Tremont St.
1908	MacLeod, Norman Murray	Newport, R. I. Newport Hospital.
1911	MacMichael, Earle Haggett	Malden. 56 Summer St.
1890	MacMillan, Andrew Louis	Hanover. Washington St.
1910	MacMillan, Andrew Louis, Jr.	Concord, N. H. 28 South Main St.
1910	MacNeil, Charles Seward Jadis	Malden. 143 Main St.
1912	Macomber, Donald	West Newton (Newton). Office, Boston. 355 Marlboro' St.
1892 1906	MacPherson, William Ellsworth	St. Marc, Haiti.
1904	Macrae, Annie Campbell	Fall River. 130 Rock St.
1904	Madden, William Daniel	Boston. 669 Mass. Av.
1905	Magrath, George Burgess	Boston. 274 Boylston St.
1898	Maguire, Charles Francis	Somerville. 432 Medford St.
1906	Maguire, Eugene Leo	Somerville. 390 Medford St.
1908	Magune, Frank Leroy	Worcester. 765 Main St.
1903	Magurn, Francis Thomas Louis	Charlestown (Boston). 112 Main St.
1913	Mahar, Harold Robert Collins	Orange. 1 High St.
1904	Mahoney, Daniel Francis	Boston. 24 Marlboro' St.
1898	Mahoney, Edward Joseph	Springfield. 4 Mattoon St.
1896	Mahoney, George Clifton	West Somerville (Somerville). 97 College Av.
1911	Mahoney, Matthew Patrick	Lowell. 169 Merrimack St.
1888	Mahoney, Stephen Andrew	Hoyloke. 630 Dwight St.
1913	Mahoney, Walter Francis	Westborough. 39 South St.
1902	Mahony, Francis Ronan	Lowell. 8 Merrimack Sq.
1899	Mains, Charles Frederick	Dorchester (Boston). 1485 Dorchester Av.
1905	Makechnie, Arthur North	Cambridge. 14 Upland Rd.
1879	Makechnie, Horace Perkins †1907	West Somerville (Somerville). 238 Elm St.
1891	Mallory, Frank Burr	Brookline. Office, Roxbury (Boston). 240 Longwood Av.
1903	Malone, Charles	Jamaica Plain (Boston). 3 Glen Rd.
1908	Maloney, John Martin	Springfield. 559 Liberty St.
1905	Maloney, Thomas Aloysius	Springfield. 315 Walnut St.
1893	Manahan, Herbert Wellington	Lawrence. 104 South Broadway.
1901	Mandell, Augustus Hamlin	New Bedford. 25 Sycamore St.
1893	Mangan, John Joseph	Lynn. 174 South Common St.
1902	Manix, Edward Tuck	Lynn. 59 Lewis St.
1908	Mann, William Orris	Brookline. 24 Warwick Rd.
1908	Mannix, Louis Edward	Chicopee Falls (Chicopee). 112 Main St.
1869	Mansfield, Henry Tucker †1911	Needham. 897 Highland Av.
1897	Mansfield, James Albert	Roxbury (Boston). 342 Dudley St.
1899	Mansur, Leon Wallace	Los Angeles, Calif. 1109 Brockman Bldg.
1911	Mara, Joseph Lawrence	Brockton. 616 Main St.
1912	Marble, Henry Chase	Boston. 28 Commonwealth Av.
1870	Marble, John Oliver †1908	Worcester. 16 Murray Av.
1903	Marcley, Walter John	Minneapolis, Minn. 9th St. and Nicolet Av.
1863	Marcy, Henry Orlando	Boston. Office, Cambridge. 860 Mass. Av.
1901	Marcy, Henry Orlando, Jr.	Newton. 140 Sargent St.
1903	Markham, Erwin Walter	Lee. Main St.
1913	Maroney, Patrick Joseph	Westfield. 16 Chapel St.
1913	Marr, Edward Loring	Melrose. 36 Whittier St.
1898	Marr, Myron Lawrence	Dorchester (Boston). 11 Hopestill St.
1907	Marr, Myron Whitmore	Dorchester (Boston). 206 Minot St.
1912	Marr, Robert McClellan	Springfield. Mercy Hosp.
1912	Marsden, George	New Bedford. 1579 Acushnet Av.
1910	Marsh, Anna Peabody	Danvers. 155 Center St.
1895	Marsh, Arthur White	Worcester. 690 Main St.
1903	Marshall, Augustus Thompson	Chelsea, Vt.
1909	Marshall, Herman Weston	Boston. 8 Marlboro' St.
1908	Marshall, William Reginald	Lynn. 26 Broad St.
1911	Marston, Warren Winfield	Newton. 337 Washington St.
1897	Martel, Stanislaus	Lynn. Office, Boston. 362 Commonwealth Av.
1897	Martin, Archibald Herbert	Lynn. 29 Broad St.
1913	Martin, Edward	Roxbury (Boston). 217 Warren St.
1913	Martin, Harold Winthrop	Dorchester (Boston). 26 Glenarm St.

1898 Martin, Harry Charles.... Springfield. 374 Main St.
1904 Martin, John Brayton..... Lynn. 25 Newhall St.
1913 Martin, John Foley........ Boston. 1 Mountfort St.
1897 Martin, John Macleod..... Roxbury (Boston). 238 Warren St.
1891 Martin, Miles............. Boston. Hotel Westminster, Copley Sq.
1902 Marvell, Mary Wilbur..... Fall River. 243 Highland Av.
1884 Mason, Atherton Perry.... Fitchburg. 355½ Main St.
1914 Mason, Broadstreet Henry. Worcester. State Hospital.
1913 Mason, Gilbert McClellan.. Dorchester (Boston). Office, Boston. 520 Beacon St.
1902 Mason, Nathaniel Robert... Boston. 483 Beacon St.
1907 Masse, John Baptiste...... Lawrence. 260 Broadway.
1900 Masten, Charles Howard... Worcester. 919 Main St.
1876 Mather, Edward Elias †1910 Williamstown.
1906 Mather, John Adams...... Colrain. Box 49.
1907 Mathes, Roy Wentworth... Lynn. 65 Broad St.
1910 Mathews, Robert Francis.. Worcester. 18½ Portland St.
1879 Matte, Joseph Hubert Ambrose †1914 North Adams. 82 Church St.
1909 May, George Elisha....... Newton Center (Newton). 661 Commonwealth Av.
1899 May, John Shepard........ Roxbury (Boston). 495 Warren St.
1889 Mayberry, Edwin Nelson... South Weymouth. (Weymouth).
1905 Mayberry, Frank Eugene... Pittsfield. 100 North St.
1902 Mayhew, Orland Smith.... Vineyard Haven (Tisbury).
1896 McAdams, James Philip... Lowell. 295 Central St.
1910 McAdams, Peter Stephens.. Cambridge. Office, Boston. 1075 Boylston St.
1906 McAllester, John Joseph Hector New Bedford. 216 County St.
1905 McAllester, Ralph William. Everett. 693 Broadway.
1899 McAllister, Frederick Danforth Lawrence. 31 Jackson St.
1906 McArdle, John Joseph..... Lawrence. 477 Essex St.
1902 McBain, William Hearst... Malden. 456 Pleasant St.
1910 McCabe, Francis Joseph... North Easton (Easton). 59 Main St.
1897 McCabe, John Joseph...... Holyoke. 290 Maple St.
1905 McCaffrey, Charles Francis. Somerville. 44 Summer St.
1913 McCann, Charles Daniel... Brockton. 28 Main St.
1886 McCarthy, Charles Daniel. Malden. 164 Pleasant St.
1897 McCarthy, Charles Florence Winchester. 452 Main St.
1892 McCarthy, Eugene Allan... Cambridge. 5 Bigelow St.
1908 McCarthy, Eugene Ambrose Fall River. 901 Second St.
1906 McCarthy, Francis Patrick. Mattapan (Boston). 1420 Blue Hill Av.
1907 McCarthy, Louis Flurence. Malden. 332 Pleasant St.
1897 McCarthy, Thomas Francis Marlborough. Cotting Av.
1890 McCarthy, Thomas Horatio Brockton. 183 Main St.
1906 McCarthy, Timothy Francis Jamaica, N. Y.
1878 McCarty, James Joseph... Lowell. 574 Central St.
1904 McCausland, William James Quincy. 123 Franklin St.
1875 McClean, George Chesley.. Springfield. 337 State St.
1912 McClintock, Francis Blake. Chelsea. 27 Crescent Av.
1911 McCluskey, Richard John.. Lowell. 40 Middlesex St.
1908 McClusky, Henry Lincoln.. Worcester. 7 Hawthorne St.
1869 McCollom, John Hildreth.. Boston. 29 Ivy St.
1912 McConnell, David James.. Greenfield. 2 Chapman St.
1900 McCormick, Alfred Hugh.. Northampton. 78 Main St.
1875 McCormick, Cornelius Joseph Waltham. 825 Main St.
1906 McCormick, John Joseph.. Woburn. 60 Montvale Av.
1904 McCormick, Thomas Joseph Henry Roxbury (Boston). 33 Highland St.
1907 McCready, Leo Thomas.... Jamaica Plain (Boston). 2 Peter Parley Rd.
1911 McCreery, Clarence Charles Fall River. 900 Plymouth Av.
1906 McCurdy, Theodore Edward Alexis Roxbury (Boston). 798 Tremont St.
1900 McDermott, Joseph Edward Charlestown (Boston). 296 Bunker Hill St.
1898 McDermott, William Vincent Salem. 6 Brown St.
1903 McDonald, James William. Worcester. 33 Trumbull St.
1902 McDonald, Samuel James.. Boston. 657 Boylston St.
1899 McDonald, William Joseph. Charlestown (Boston). 41 High St.
1900 McEvoy, George Albert.... Dorchester (Boston). Office, Boston. 520 Beacon St.
1894 McEvoy, Thomas Edward.. Worcester. 37 Portland St.
1898 McFee, William David.... Haverhill. 103 Merrimack St.
1914 McGann, Pierce Powers.... Boston. City Hospital.
1886 McGannon, Thomas Gerald. Lowell. 226 Merrimack St.
1891 McGauran, Michael Sheridan Lawrence. 258 Broadway.
1900 McGee, Fanny Maria...... Waban (Newton). 765 Chestnut St.
1893 McGillicuddy, John Timothy Worcester. 390 Main St.
1904 McGillicuddy, Richard Aloysius Turner's Falls (Montague). Avenue A.
1914 McGinity, Joseph Taney... Springfield. 236 Dickinson St.
1909 McGinley, Michael Charles. Ipswich. Central St.
1900 McGirr, Felix Francis..... Cambridge. 1436 Cambridge St.
1898 McGrath, Bernard Francis. Rochester, Minn. St. Mary's Hospital.
1912 McGraw, Andrew James... Taunton. 61 Broadway.
1907 McGurn, William J........ Roxbury (Boston). 1165 Tremont St.
1886 McIntire, David........... Dorchester (Boston). 246 Boston St.
1914 McIntire, Frederic Joseph. Lynn. 63 North Common St.
1908 McIntire, George Francis.. Cambridge. 5 Dana St.
1882 McIntire, Herbert Bruce... Cambridge. 4 Garden St.
1896 McIntosh, Herbert......... Sharon. Office, Boston. 419 Boylston St.
1914 McIver, George Albert..... Worcester. State Hospital.
1909 McKallagat, Peter Leo..... Lawrence. 301 Essex St.
1897 McKeen, Sylvester Forshay Allston (Boston). 556 Cambridge St.
1912 McKelvey, Alexander Dunbar Address unknown.
1892 McKenna, Francis Patrick. Jamaica Plain (Boston). 382 Center St.
1893 1912 } McKenzie, John Robert... Cambridge. 897 Mass. Av.
1901 McKibben, William Watson. Worcester. 390 Main St.
1893 1913 } McKoan, John William... Worcester. 26 Lincoln St.
1914 McLaughlin, Allen Joseph.. Boston. 145 State House.
1914 McLaughlin, Arthur Otis... Haverhill. 120 Emerson St.
1895 McLaughlin, Henry Valentine Brookline. Office, Boston. 394 Marlboro' St.
1885 McLaughlin, Joseph Ignatius Roxbury (Boston). 92 Walnut Av.
1910 McLean, John Allan....... West Somerville (Somerville). 16 Curtis St.
1901 McLeod, John Scott....... Roxbury (Boston). 151 Warren St.
1913 McMahon, Francis Joseph. Brookline. 370 Washington St.
1904 McMann, William Henry... Jamaica Plain (Boston). 328 Center St.
1900 McMurray, Francis Michael Fitchburg. 267 Main St.
1888 McNally, William Joseph.. Charlestown (Boston). 31 Monument Sq.
1903 McNamara, John James... Brockton. 231 Main St.
1898 McNeish, Alexander........ Leicester. Pleasant St.
1882 McOwen, William Henry.. Newton Upper Falls (Newton). 280 Elliot St.
1905 McPherson, George Edwin. Foxborough. Baker St.
1903 McPherson, Ross.......... New York, N. Y. 20 West 50th St.

1909 McQuade, Lewis Steele....Dorchester (Boston). 1081 Blue Hill Av.
1898 McQuaid, Thomas Bernard. Everett. 487 Broadway.
1910 McRae, Alexander John... Wilkes-Barre, Pa. City Hospital.
1914 McRobbie, Alexander....... Lynn. 48 So. Common St.
1905 McSheehy, Theobald Coleman Worcester. 86 Vernon St.
1914 McWeeny, Bernadette Marie Boston. 15 Blagdon St.
1897 Mead, Frederick Ammi.... Willimansett (Chicopee). 984 Chicopee St.
1892 Mead, George Nathaniel Plummer Winchester. 27 Church St.
1903 Mead, Louis Guy.......... Boston. 259 Beacon St.
1912 Means, James Howard..... Boston. 156 Chestnut St.
1906 Means, Philip Corydon.... Apponaug, R. I.
1905 Medalia, Leon Samuel..... Boston. 483 Beacon St.
1905 Meehan, Patrick Joseph... Lowell. 228 Worthen St.
1906 Mehan, Joseph Aloysius... Lowell. 4 Park St.
1895 Mehegan, Daniel Joseph... Taunton. 26 Pleasant St.
1890 Meigs, Joe Vincent........ Lowell. 160 Merrimack St.
1894 Meigs, Return Jonathan.. Lowell. 226 Merrimack St.
1906 Mellen, Eleanor Way Allen Newton Highlands (Newton). 291 Lake Av.
1911 Mellen, Harry George...... Pittsfield. 150 North St.
1905 Mellus, Edward............ Newton. 419 Waverley Av.
1905 Mendelsohn, Louis......... Dorchester (Boston). 477 Washington St.
1894 Mercer, William James.... Pittsfield. 142 First St.
1899 Merriam, Franklin Henry.. South Braintree (Braintree). 37 Holbrook Av.
1893 Merrick, Robert Michael.. Dorchester (Boston). 18 Mt. Ida Road.
1914 Merrill, Adelbert Samuel.. Boston. 660 Tremont St.
1896 Merrill, Arthur Ellsworth. Somerville. 367 Medford St.
1905 Merrill, Ayres Philip...... Pittsfield. 519 North St.
1896 Merrill, William Howe..... Lawrence. 301 Essex St.
1901 Merritt, Louis Arthur..... Wollaston (Quincy). 357 Newport Av.
1897 Merritt, Silas Virgil....... Fall River. 297 Osborn St.
1900 Merritt, Victor Sulviro.... Springfield. 141 Wilbraham Road.
1883 Messer, Charles Carson.... Turners' Falls (Montague). Avenue A.
1910 Messer, Edward Raymond. Pittsfield. 344 North St.
1905 Messinger, Harry Carleton. Providence, R. I. 260 Broad St.
1896 Metcalf, Ben Hicks........ Winthrop. 174 Winthrop St.
1913 Metcalf, Julia Tracy...... Brookline. 16 Browne St.
1914 Metcalf, Richard........... Boston. 24 McLean St.
1912 Metzger, Butler............ Lynn. 153 Lewis St.
1914 Meyer, Edward James..... Somerville. 18 Bow St.
1901 Middleton, Willis Johnson. Quincy. 446 Washington St.
1885 Mignault, Rodrigue........ Lowell. 534 Merrimack St.
1909 Miles, Charles Gardner.... Brockton. 23 Main St.
1893 Miles, George Albert...... West Somerville (Somerville). 56 Chester St.
1867 Millard, Henry James †1908 North Adams. 81 Church St.
1892 Miller, Charles Herman... Dorchester (Boston). The Peabody, Ashmont St.
1877 Miller, Ernest Parker..... Fitchburg. 408 Main St.
1910 Miller, George Fremont.... Boston. 660 Tremont St.
1895 Miller, Lester Colwell..... Worcester. 14 Oxford St.
1909 Miller, Percy Farrington... Harwich. Main St.
1912 Miller, Richard Henry..... Boston. 279 Clarendon St.
1900 Miller, Samuel Osgood..... Three Rivers (Palmer).
1880 Millet, Charles Sumner... Brockton. 23 Main St.
1913 Millett, Frank Albertus... Greenfield 17½ Federal St
1898 Milliken, Charles Warren.. Barnstable
1893 Milot, Alphonse François... Taunton. 160 Bay St.
1900 Milot, Wilfrid François.... Attleborough. 27 Bank St.
1912 Mindlin, Carl............. Haverhill. 343 Washington St.
1891 Miner, Worthington Warner Ware. 37 Main St.
1912 Minot, George Richards... Boston 188 Marlboro' St.
1877 Minot, James Jackson..... Boston 188 Marlboro' St.
1896 Minshall, Arthur Gladstone Northampton. 16 Center St.
1893 Mitchell, Arthur.......... Medfield.
1897 Mitchell, Harry Walter.... Warren, Pa. State Hosp.
1895 Mitchell, Mary Paulsell.... Warren, Pa. State Hosp.
1901 Mitchell, William.......... Needham Highlands (Needham).
1908 Mixter, Charles Galloupe.. Boston. 180 Marlboro' St.
1881 Mixter, Samuel Jason...... Boston. 180 Marlboro' St.
1907 Mixter, William Jason..... Boston. 180 Marlboro' St.
1909 Moeckel, Carl Richard.... Lawrence. 443 Broadway.
1904 Moline, Charles.......... Sunderland.
1911 Monahan, Edward James.. Revere. 665 Beach St.
1914 Monahan, John Ambrose... Clinton. 181 Chestnut St.
1913 Moncrieff, William Armitage New Bedford. 142 Merrimack St.
1894 Mongan, Charles Edward.. Somerville. 24 Central St.
1880 Monks, George Howard.... Boston. 67 Marlboro' St.
1907 Monty, Adelbert Howard.. Brooklyn, N. Y. Norwegian Hospital.
1898 1911 } Moody, Flora Frost.... { Springfield. 77 Dartmouth St.
1911 Moore, Frederick Porter... Foxborough. State Hosp.
1911 Moore, George Albert...... Brockton. 47 Green St.
1904 1914 } Moore, George Colton..... Boston. 16 Union Park.
1913 Moore, Howard............ Newton. Office, Boston. 272 Newbury St.
1908 1915 } Moore, John Francis.... Worcester. 11 Elm St.
1898 Moore, John Henry........ Boston. 419 Boylston St.
1914 Moore, Mary Teresa Veronica Roxbury (Boston). Office, Boston. 419 Boylston St.
1901 Moore, Philip Patrick...... Gloucester. 58 Middle St.
1903 Mooring, Scott Webber..... Gloucester. 738 Washington St.
1907 Moran, Charles Leo........ U. S. Navy.
1872 Moran, John Brennan †1908 Roxbury (Boston). 35 Mt. Pleasant Av.
1911 Morgan, Charles Russell... Boston. 335A Columbus Av.
1885 Morgan, John............. Boston. 39 Huntington Av.
1903 Morgner, Richard August.. Fitchburg. 429 Main St.
1914 Moriarty, Patrick Maurice. Springfield. 820 State St.
1878 Morong, Arthur Bennett... Boston. 12 Blackwood St.
1891 Morris, George Patrick.... South Boston (Boston). 811 Broadway.
1891 Morris, James Stewart..... Revere. 648 Beach St.
1889 Morris, John Gavin........ South Boston (Boston). 97 Broadway.
1873 Morris, Michael Augustine.. Charlestown (Boston). Office, Boston. 390 Commonwealth Av.
1897 Morris, Richard Holt...... Everett. 39 Corey St.
1907 Morrison, Archibald Benjamin Boston. 353 Mass. Av.
1910 Morrison, Hyman.......... Dorchester (Boston). 103 Glenway St.
1908 Morrison, Robert Francis.. Holyoke. 32 Main St.
1887 Morrison, William Alexander East Boston (Boston). 80 Princeton St.
1913 Morrison, William Reid.... East Boston (Boston). 80 Princeton St.
1892 Morrow, Charles Harvey... Gloucester. 46 Pleasant St.
1906 Morrow, William Robert... Framingham. 21 Irving St.
1898 Morse, Almon Gardner..... Hingham. Office, Boston. 421 Marlboro' St.
1892 Morse, Charles Ellsworth.. Wareham. Main St.
1896 1914 } Morse, Charles Frederick Boston. 263 Summer St.
1887 Morse, Frank Adelbert..... Lynn. 11 Lincoln St.
1896 Morse, Frank Leander..... Somerville. 78 Highland Av.
1885 Morse, Fred Harris.. ..... Winthrop. Office, Boston. 462 Boylston St.
1910 Morse, George W........... Boston. 30 Pinckney St.
1878 Morse, Henry Lee.......... Boston. 112 Marlboro' St.
1910 Morse, Irene May.......... Clinton. 124 Water St.
1890 Morse, John Lovett........ Boston. 70 Bay State Rd.
1905 1914 } Morse, Nathaniel Niles. { Mattapan (Boston). 120 Wellington Hill St.
1909 Morse, Roy Sydney........ Ashland.
1898 Mosher, Harris Peyton.... Boston. 828 Beacon St.

1914 Mosher, Marshall James...Waltham. 925 Main St.
1914 Mossman, George..........Fitchburg. Burbank Hosp.
1909 Mudge, Otis Pope.........Amesbury. 16 Market St.
1913 Mulcahy, William Edward. Springfield. 247 Eastern Av.
1908 Mullen, Peter James.......Amesbury. 12 Sparhawk St.
1884 Munro, Walter Lee........Providence, R. I. 62 North Main St.
1906 Munroe, Harrington Bennett Lynn. 875 Western Av.
1901 Murdock, Frederick William Brockton. 37 West Elm St.
1908 Murphy, Anna Frances....Worcester. 831 Main St.
1903 Murphy, Daniel David....Amesbury. 164 Main St.
1914 Murphy, Edward Frederick. Roxbury (Boston). 1451 Tremont St.
1904 Murphy, Edward Martin...Lowell. 175 Central St.
1900 Murphy, Edward Vincent..Newport. R. I. 118 Mill St.
1895 Murphy, Emily Frances....Taunton. 23 Summer St.
1884 Murphy, Francis Charles...Boston. 315 Marlboro, St.
1904 Murphy, Frank Augustine..Taunton. 4 Fruit St.
1902 Murphy, Fred Towsley.....St. Louis, Mo. 1806 Locust St.
1905 Murphy, Frederick Paul...Lowell. 219 Central St.
1905 Murphy, Frederick Vincent. Attleborough. 51 Bank St.
1913 Murphy, John Joseph.....Cambridge. 3 Norris St.
1910 Murphy, John Patrick Henry Washington, D. C. Govt. Hosp. for Insane.
1882 Murphy, Joseph Briggs....Taunton. 23 Summer St.
1913 Murphy, Joseph Leroy.....Taunton. 23 Summer St.
1905 Murphy, Thomas William..Lawrence. 248 Broadway.
1898 Murphy, Timothy Joseph..Roxbury (Boston). Office, Boston. 520 Beacon St.
1910 Murray, Benjamin Frank..Boston. 6 Beacon St.
1910 Murray, Patrick Joseph....Dorchester (Boston). 162 Harvard St.
1907 Myers, Elizabeth Young...Springfield. 11 St. James Av.
1903 Myers, Samuel William....Boston. 47 Chambers St.
1903 Myers, Solomon...........East Boston (Boston). 93 Lexington St.
1904 Myles, Leo Thomas........Cambridge. 146 Oxford St.
1910 Myrick, Alfred Winthrop..Randolph.
1901 Myrick, Hannah Glidden...Roxbury (Boston). Office, Boston. 502 Beacon St.
1909 Mysel, Hymen Abraham...Haverhill. 310 Washington St.
1913 Mysel, Philip.............Dorchester (Boston). 1095 Blue Hill Av.

N

1905 Nagle, Evelyn Wyman....Boston. 550 Newbury St.
1899 Nason, Arthur Clark......Newburyport. 178 High St.
1895 Nason, Osman Cleander Baker Cambridge. 5 Chester St.
1914 Nathanson, Elias Saul.....Lynn. 242 Summer St.
1910 Naurison, James Zuslofsky. Springfield. 25 North Main St.
1908 Neff, Irwin Hoffman......Foxborough. State Hosp.
1872 Neilson, William..........North Leominster (Leominster). 34 Moorland Av. †1905
1903 Nelligan, John Patrick....Cambridge. 2280 Mass. Av.
1912 Nelson, Christian Augustus. Cambridge. 1010 Mass. Av.
1908 Nettle, Paul...............Haverhill. 207 Groveland St.
1907 Nevers, Harry Hill........Lawrence. 204 South Union St.
1912 Newburgh, Louis Harry...Roxbury (Boston). Office, Boston. 419 Beacon St.
1897 Newell, Franklin Spilman. Boston. 443 Beacon St.
1901 Newhall, Avery Lester....Lynn. 7 Vine St.
1909 Newhall, Harvey Field....Lynn. 51 Nahant St.
1886 Newhall, Herbert William. Lynn. 82 Broad St.
1886 Newhall, Lawrence Thompson Brookfield.
1899 Newton, Aaron Lewis......Northfield.
1914 Newton, Edward Roswell..Somerville. 50 Benton Rd.
1906 Newton, Ralph Waldo.....U. S. Army.
1909 Newton, Roland Stephen...Westborough. 50 West Main St.
1898 Newton, William Curtis...Revere. 596 Beach St.
1870 Nichols, Arthur Howard †1911 Boston. 55 Mt. Vernon St.
1890 Nichols, Edward Hall.....Boston. 294 Marlboro' St.
1892 Nichols, John Holyoke.....Tewksbury. State Infirmary.
1884 Nickerson, George Wheaton Stoneham. 55 Central St.
1902 Nickerson, John Peter.....West Harwich (Harwich).
1871 Nickerson, William Jabez †1910 New Bedford. 164 Middle St.
1911 Nield, William Andrew....New Bedford. 62 Fifth St.
1899 Nielsen, Edwin Björne....West Newton (Newton). Office, Boston. 543 Boylston St.
1912 Nietsch, Walter Eric Lothar New Bedford. St. Luke's Hospital.
1900 Nightingale, James........Worcester. 138 Franklin St.
1874 Nims, Edward Beecher †1903 Springfield. 40 Harvard St.
1914 Nishan, Hampersumian Miguerditch Boston. 1747 Washington St.
1887 Noble, Alfred Ira..........Kalamazoo. Mich. Box A.
1895 Noble, Anngenette Fowler. Westfield. 21 Noble St.
1906 Noble, Mary Gill..........Dorchester (Boston). State Hospital.
1902 Nolen, Walter Freeman....Boston. 535 Beacon St.
1911 Noonan, William Andrew..Cambridge. 472 Cambridge St.
1914 Normand, Jean Napoleon...Fall River. 183 Hunter St.
1865 Norris, Albert Lane †1907 Malden. 283 Clifton St.
1903 Norris, Albert Perley.....Cambridge. 760 Mass. Av.
1886 Norton, Eben Carver.... Norwood. 792 Washington St.
1903 Norton, George Edward...Cambridge. 102 River St.
1900 Norton, George Paul......Fitchburg. 24 Prichard St.
1910 Norton, Herbert Rozelle...Dorchester (Boston). 11 Bloomfield St.
1881 Noyes, Ernest Henry......Newburyport. 12 Essex St.
1908 Noyes, John Russell.......Brockton. 63 Main St.
1905 Noyes, Margaret Louise...Boston. 103 St. James Av.
1890 Noyes, Nathaniel Kingsbury Duxbury. Washington St.
1891 Noyes, William............Jamaica Plain (Boston). Office, Boston. 419 Boylston St.
1905 Noyes, William Nelson.....Salem. 12 Pleasant St.
1914 Nute, Albert James........Boston. U. S. Immigration Station.
1898 Nute, Marion.............Dorchester (Boston). 461 Washington St.
1903 Nye, Harry Royal.........Leominster. 27 Cotton St.

O

1901 Ober, Frank Roberts......Roxbury (Boston). 300 Longwood Av.
1904 Ober, Ralph Beverley.....Springfield. 76 Maple St.
1912 O'Brien, Carl Robert......Allston (Boston). 1230 Commonwealth Av.
1903 O'Brien, Charles Thomas..Woburn. 11 Pleasant St.
1905 O'Brien, Daniel Paul......New Bedford. 330 Union St.
1912 O'Brien, Edward Joseph...East Boston (Boston). Office, Boston. 543 Boylston St.
1911 O'Brien, Frederick William Brockton. 12 Cottage St.
1903 O'Brien, John Francis.....Charlestown (Boston). Office, Boston. 520 Beacon St.
1911 O'Brien, John Francis.....Fall River. Union Hosp.
1911 O'Brien, John Francis.....Taunton. State Hospital.
1905 O'Brien, Joseph Jeremiah..Dorchester (Boston). 2175 Dorchester Av.
1900 O'Brien, Thomas James...Roxbury (Boston). Office, Boston. 483 Beacon St.
1902 O'Brien, Walter John Leo. Jamaica Plain (Boston). 218 South St.

1885	O'Callaghan, Mary Vincent	Worcester. 137 Pleasant St.
1905	O'Connell, Andrew Edward	Worcester. 390 Main St.
1902	O'Connor, Dennis Francis	Worcester. 340 Main St.
1893	O'Connor, James Bernard	Lowell. 188 Moore St.
1901	O'Connor, John Francis	Worcester. 25 Portland St.
1896	O'Connor, John Henry	Hyde Park (Boston). 26 Oak St.
1910 1915	O'Connor, Joseph William	Worcester. 772 Main St.
1911	O'Connor, Patrick Henry	New Bedford. 240 County St.
1907	O'Connor, Thomas Hugh	Roxbury (Boston). 1466 Tremont St.
1903	O'Day, George Frederick	Worcester. 10 Vernon St.
1881	O'Donnell, Francis Michael	Newton. 619 Washington St.
1912	O'Donnell, George Thomas	Address unknown.
1914	Oeser, Paul Richard	Lawrence. 272 Jackson St.
1892	Ogden, Jay Bergen	New York, N. Y. 1 Madison Av.
1913	O'Hare, James Patrick	Dorchester (Boston). 1775 Dorchester Av.
1908	O'Keefe, Abbie Mabel	Roxbury (Boston). Office, Boston. 541 Boylston St.
1899	O'Keefe, Daniel Thomas	Jamaica Plain (Boston). 28 Glen Road.
1914	O'Keefe, Edward Scott	Lynn. 164 Essex St.
1893	O'Keefe, Michael Wallace	East Boston (Boston). 30 Princeton St.
1907	O'Leary, Joseph Augustus	Wakefield. 16 Chestnut St.
1895	Olin, Francis Henry	Southbridge Hamilton St.
1912	Olin, Harry	Roxbury (Boston). 444 Warren St.
1906	Oliver, Everard Lawrence	Boston. 362 Commonwealth Av.
1855	Oliver, Henry Kemble †1898	Boston.
1905	O'Malley, Edward Francis	Fitchburg. 36 Prichard St.
1913	O'Meara, John George	Providence. R. I. 547 Broadway.
1891	O'Meara, Michael John	Worcester. 17 Wellington St.
1897	O'Neil, Richard Frothingham	Boston. 379 Beacon St.
1896	Ordway, Charles Anthony	Everett. 346 Main St.
1904	Ordway, Clarence Eugene	Winchester. 371 Main St.
1905	Ordway, Mabel Dyer	Jamaica Plain (Boston). 6 Parley Vale.
1905	Ordway, Thomas	West Roxbury (Boston). Office, Roxbury. 240 Longwood Av.
1914	O'Reilly, William Francis	Lynn. 144 South Common St.
1914	O'Rourke, Edward James	Cambridge. 2280 Mass. Av.
1900	Orr, Samuel Sanford	Weston. Central Av.
1902	Osborne, Caroline Amelia	Worcester. 145 Woodland St.
1903	Osborne, Ernest Sumner	West Dennis (Dennis).
1905	Osgood, George	Cohasset.
1904	Osgood, George Edward	West Somerville (Somerville). 333 Highland Av.
1892	Osgood, Gilman	Rockland. 258 Union St.
1901	Osgood, Robert Bayley	Boston. 372 Marlboro' St.
1886	O'Shea, Joseph Francis	Lynn. 31 Broad St.
1911	O'Sullivan, Anna	Boston. 175 Dartmouth St.
1899	O'Sullivan, John Joseph	Lawrence. 340 Haverhill St.
1876	Otis, Edward Osgood	Boston. 381 Beacon St.
1881	Otis, Walter Joseph	Boston. 267 Beacon St.
1909	O'Toole, John Laurence	Bradford (Haverhill). 112 Main St.
1894	Ott, George John	Boston. 149 Tremont St.
1913	Overlander, Charles Leonard	Boston. 520 Beacon St.
1910	Overlander, John Eliot	New York, N. Y. Presbyterian Hospital.
1899	Overlock, Melvin George	Worcester 91 Chandler St.
1876	Oviatt, George Alexander	South Sudbury (Sudbury).
1912	Owen, Albert Simpson	Framingham. 44 Lincoln St.

P

1911	Pachanian, Sumpat Kevork	Lowell. 40 Middlesex St.
1895	Packard, Edward Albert	Boston. 908 Beacon St.
1903	Packard, Frederic Henry	Waverley. McLean Hosp.
1899	Packard, George Henry	White Rock, N. C.
1907	Packard, Horace	Boston. 470 Commonwealth Av.
1913	Packard, Loring Bradford	Brockton. Brockton Hospital.
1907	Paddock, Brace Whitman	Pittsfield. 7 North St.
1876	Paddock, William Le Roy	Pittsfield. 7 North St.
1893	Page, Albert Kidder	Boston. 339 Mass. Av.
1894	Page, Calvin Gates	Boston. 128 Marlboro' St.
1870 1892 1909	Page, Charles Whitney †1912	Hartford, Conn. 94 Woodland St.
1898	Page, George Thornton	Cambridge. 113 Inman St.
1892	Page, Hartstein Wendell	Baldwinsville (Templeton).
1898	Pagé, Joseph Gregory Elias	Southbridge. 28 Hamilton St.
1864	Paige, Nomus †1906	Taunton. 49 Broadway.
1905	Paine, Alonzo Kingman	Boston. 366 Commonwealth Av.
1867	Paine, Amasa Elliott	Brockton. 439 Belmont Av.
1910	Paine, Harlan Lloyd	Gardner. State Colony.
1908	Paine, Nathaniel Emmons	West Newton (Newton). 1650 Washington St.
1896	Painter, Charles Fairbank	Newton. Office Boston. 372 Marlboro' St.
1904	Palfrey, Francis Winslow	Boston. 80 Marlboro' St.
1893	Palmer, Ezra	Boston. 175 Dartmouth St.
1892	Palmer, George Monroe	Cambridge. 23 Ware St.
1882	Palmer, Lewis Merritt	Framingham. 62 Concord St.
1888	Palmer, Sarah Ellen	Boston. 483 Beacon St.
1912	Palmer, Walter Walker	Boston. Mass. Gen'l Hosp.
1905	Paquin, Joseph Ubalde	New Bedford. 1306 Acushnet Av.
1901	Parcher, George Clarence	Saugus. 319 Central St.
1890	Park, Francis Edwin	Stoneham. 350 Main St.
1906	Parker, Albert Munro	Santa Maria, Calif. P. O. Box 355.
1904	Parker, Ernest Lawrence	Worcester. 12 Mass. Av.
1914	Parker, Frederick Daniel	Needham. 101 May St.
1902	Parker, Helen Schlesinger	Brookline. Warren St.
1867	Parker, Moses Greely †1913	Lowell. 11 First St.
1899	Parker, Ralph Walter	Lowell. 53 Central St.
1914	Parker, Raymond Brewer	Winthrop. 148 Winthrop St.
1893 1913	Parker, Wallace Asahel	Medford. 101 Fellsway.
1899	Parker, Walter Henry	Dorchester (Boston). 1773 Dorchester Av.
1912	Parker, Willard Stephen	Boston. 355 Marlboro' St.
1877	Parks, Edward Luther	Roxbury (Boston). 640 Huntington Av.
1890	Parks, John Wilson	East Boston (Boston). 132 London St.
1887	Parks, Silas Henry	Great Barrington. 314 Main St.
1892	Parmelee, William Josiah	Springfield. 254 North Main St.
1905	Parr, John	Methuen. Office, Lawrence. 539 Broadway.
1887	Parsons, Frank Sears	Dorchester (Boston). 367 Adams St.
1914	Partridge, Thomas Jefferson	Cambridge. 11 Magazine St.
1910	Parvey, Benjamin	Dorchester (Boston). 62 Glenway St.
1906	Pascoe, William Whelan	Adams. 67 Summer St.
1892	Patch, William Thurston	Roxbury (Boston). 196 Warren St.
1902	Patten, Stephen Kerr	Roxbury (Boston). 7 Waumbeck St.
1905	Patterson, Alice Maria	South Hadley. Brigham Hall.
1900	Patterson, William Francis	Charlestown (Boston). 385 Main St.
1905	Pattrell, Arthur Ellis	North Grafton (Grafton).

1899 Paul, Luther Gordon.......Boston. 321 Beacon St.
1887 Paul, Walter Everard......Boston. 104 Marlboro' St.
1912 Pavlo, Samuel George.....Malden. 230 Bryant St.
1891 Payne, James Henry.......U. S. Navy (retired). Boston. 344 Commonwealth Av.
1907 Peabody, Francis Weld....Cambridge. 13 Kirkland St.
1908 Pearce, Arthur Cushing....Brookline. Office, Boston. 543 Boylston St.
1914 Pearce, George Girdwood..New Bedford. 18 Seventh St.
1912 Pearl, Samuel Maurice.....Boston. 39 Chambers St.
1902 Pearson, Charles Lusby....Newton. Office, Boston. 583 Beacon St.
1891 Pearson, Maurice Wellesley Ware. 19 Pleasant St.
1899 Pease, Charles Wood......Needham. 20 Dedham Av.
1892 Pease, Edward Allen.......Boston. 431 Beacon St.
1906 Pease, Lewis Waite........Weymouth. 65 Washington St.
1895 Peck, Albert Fred.........Spencer. Mechanic St.
1907 Peck, Roy Hamilton.......Springfield. 15 Temple St.
1895 Pedrick, Stephen Augustus..Rowley.
1907 Peirce, Bradford Hendrick.Cambridge. 1717 Cambridge St.
1887 Peirce, Charles John.......Shirley Village (Shirley).
1899 Peirce, George Alphonso....Dorchester (Boston). 38 Sargent St.
1889 Peirson, Edward Lawrence. Salem. 13 Barton Sq.
1908 Pelletier, Alfred George....Winchendon. 261 Central St.
1913 Pemberton, Frank Arthur..Boston. 175 Dartmouth St.
1906 Penhallow, Dunlap Pearce..Boston. 46 Gloucester St.
1903 Penny, Herbert Thomas...Cliftondale (Saugus). 26 Jackson St.
1911 Penny, Mary McDermott...Cliftondale (Saugus). 26 Jackson St.
1914 Percy, Karlton Goodsell....Boston. 8 Gloucester St.
1914 Perkins, Franklin Haskins. Wrentham. State School.
1907 Perkins, Harry Bradford...Haverhill. 325 Washington St.
1914 Perkins, Roy Stanley......Salem. Salem Hospital.
1907 Perkins, Thomas Tounge...Cliftondale (Saugus). 315 Lincoln Av.
1898 Perley, Roscoe Damon....Melrose. 63 West Emerson St.
1913 Perras, Louis Adélard.....New Bedford. 129 Ruth St.
1885 Perry, Arthur Pedro.......Jamaica Plain (Boston). Office, Boston. 419 Boylston St.
1911 Perry, Charles Eugene.....Haydenville (Williamsburg). Hampshire Co. Sanatorium.
1883 1891 Perry, George Lewis.....Athol. 304 Main St.
1913 Perry, Harold Edgar......New Bedford. St. Luke's Hospital.
1896 Perry, Henry Joseph.......Boston. 636 Beacon St.
1891 Perry, Herbert Brainard...Northampton. 187 Main St.
1885 Perry, Martha †1913 Taunton. 68 Broadway.
1908 Perry Sherman............Tewksbury. State Infir'y.
1913 Peter, Alphonse Joseph....Newburyport. 68 Middle St.
1892 Peterson, Charles Augustus Burton New Bedford. 90 Hillman St.
1913 Peterson, Hugo Oliver.....Worcester. 44 Pleasant St.
1901 Peterson, John Adna.......Hingham.
1909 Pettey, John Anderson.....Brockton. 63 Main St.
1914 Pettingill, Olin Sewall.....Wallum Lake, R. I. State Sanatorium.
1913 Phaneuf, Louis Eusèbe.....Brookline. Free Hospital for Women.
1912 Phelan, Edward Francis...North Brookfield.
1892 Phelps, John Samuel.......Boston. 76 Commonwealth Av.
1907 Phelps, Olney Draper......Worcester. 452 Main St.
1892 Phelps, Olney Windsor †1914 Warren. Maple St.
1910 Philbrick, Roscoe Hunter..East Northfield (Northfield).
1907 Phillips, Wilson Frank....Dorchester (Boston). 3 Whitman St.
1887 Phippen, Hardy...........Salem. 84 Washington Sq.
1904 Phippen, Walter Gray......Salem. 31 Chestnut St.
1910 Phipps, Cadis.............Boston. 536 Commonwealth Av.
1880 Phipps, Walter Andros.....Address unknown.
1896 Pickard, Isaiah Lovell.....Concord Junction (Concord).
1895 Pierce, Appleton Howe.....Leominster. 100 West St.
1887 Pierce, Frank Benneville..Haverhill. 132 Main St.
1898 Pierce, George Burgess.....Milton. Office, Boston. 178 Devonshire St.
1882 Pierce Matthew Vassar....Milton. Canton Av.
1886 1909 Pierce, Willard Henry..Bernardston. Office, Greenfield. 191 Main St.
1908 Pierce-Higgins, Eudora....Taunton. 175 High St.
1914 Pierson, Philip Hale.......Boston. 72 Pinckney St.
1886 Pigeon, James Cogswell Du Maresque Roxbury (Boston). 27 Elm Hill Av.
1905 Pike, Forrest Fay.........Melrose. 67 Wyoming Av.
1892 Pike, Forrest Wiley........Portsmouth, N. H. 4 Pleasant St.
1901 1906 Pike, Winfred Carle......Boston. 82 Huntington Av.
1900 Pillsbury, Boyden Harlin..Lowell. 8 Merrimack St.
1897 Pillsbury, Ernest Dean....West Somerville (Somerville). 8 Curtis St.
1909 Pillsbury, Fitzroy Farnsworth Lowell. 9 Central St.
1870 Pillsbury, George Harlin..Lowell. 58 Central St.
1874 Pillsbury, Warren Wilbur..Newburyport. †1915 63 Washington St.
1862 Pinkham, George Edwin †1906 Lowell. 268 East Merrimack St.
1869 Pinkham, Joseph Gurney...Lynn. 64 Nahant St.
1895 Piper, Frank..............Boston. 39 Hancock St.
1910 Piper, Fred Smith..........Lexington. 462 Mass. Av.
1885 Pitcher, Herbert Frank....Haverhill. 50 Merrimack St.
1912 Pitcher, Hervey Brackett...Leominster. 82 Main St.
1901 Pitta, Joao Carlos da Silva.New Bedford. 57 Allen St.
1907 Place, Edwin Hemphill.....Boston. 745 Mass. Av.
1899 Place, Ralph Waldo........Somerville. 165 Medford St.
1907 Playse, Linn Foss..........Hopkinton. 14 Church St.
1879 Plimpton, Lewis Henry....Norwood. Walpole St.
1890 Plummer, Edward Maverick Charlestown (Boston). Office, Boston. 583 Beacon St.
1897 Plummer, Frank Joseph....Malden. 162 Ferry St.
1898 Plummer, Frank Wentworth Malden. 340 Pleasant St
1906 Plunkett, Harold Brabazon.Lowell. 9 Central St.
1907 Pofcher, Elias Harry.......Worcester. 98 Winter St.
1887 Poirier, Emile.............Salem. 7 Harbor St.
1903 Poirier, Horace............Salem. 173 Lafayette St.
1886 Pomeroy, Hiram Sterling...Boston. 657 Boylston St.
1886 Pomeroy, William Henry...Springfield. 310 State St.
1902 Pond, Bernard Wesley.....Boston. 4 Concord Sq.
1908 Pond, Lucius Beverly......Easthampton. 113 Main St.
1909 Poole, Laurence Earl.......Gardner. 63 Parker St.
1886 Pope, Emily Frances.......Boston. 163 Newbury St.
1887 Pope, Frank Fletcher.......Ashby.
1911 Popoff, Constantine........Haverhill. 158 Main St.
1892 Porter, Charles Allen......Boston. 254 Beacon St.
1873 1877 Porter, Frank Edward..Auburndale (Newton). 409 Auburn St.
1903 Porter, Robert Brastow....North Easton (Easton). 4 Day St.
1895 Porter, William Townsend. Dover. Office, Roxbury. (Boston). 240 Longwood Av.
1870 Post, Abner...............Boston. 16 Newbury St.
1904 Pote, Leonard Holden......West Somerville (Somerville). 714 Broadway.
1889 Pothier, Joseph Charles....New Bedford. 247 Fourth St.
1901 Potter, Alexander Carleton. Cambridge. Office Boston. 186 Commonwealth Av.
1896 Potter, Frances Wason.....Framingham. 11 Lexington Av.

1907 Potter, John Claude....... Framingham. 53 Concord St.
1899 Potter, Lester Forest....... New Bedford. 278 Union St.
1898 Potts, Joseph Henry....... Holyoke. 143 Chestnut St.
1908 Powell, Maud Agatha...... Laconia N. H.
1912 Power, George Aloysius.... Worcester. 7 Vernon St.
1909 Powers, Edward Parnell... Roxbury (Boston). 1611 Tremont St.
1905 Powers, George Herman... Boston. 298 Marlboro' St.
1905 Powers, Herbert Hale...... Brookline. 68 Davis Av.
1911 Powers, John Thomas Haliburton Chicopee Falls (Chicopee). 37 East St.
1910 Praino, Gaetano........... Boston. 39 Broadway Extension.
1868 Pratt, Calvin †1908 Bridgewater. South St.
1894 Pratt, Charles Augustus... New Bedford. 60 Orchard St.
1908 Pratt, David Damon....... New Bedford. 319 Union St.
1913 Pratt, Ezekiel............. Arlington. 374 Mass. Av.
1892 Pratt, John Washburn..... Dedham. St. Paul. Sq.
1898 Pratt, Joseph Hersey....... Brookline. Office, Boston. 317 Marlboro' St.
1908 Pratt, Mason Ross......... Syracuse, N. Y. 110 Marshall St.
1884 Preble, Wallace............ Cambridge. 22 Appian Way.
1910 Preble, William Emerson... Boston. 416 Marlboro' St.
1908 Prenn, Joseph............. Boston. 407 Marlboro' St.
1865 Presbrey, Silas Dean †1911 Taunton. 103 Weir St.
1867 Prescott, Charles Dudley.. †1915 New Bedford. 108 South Ash St.
1905 Prescott, Henry Dudley.... New Bedford. 176 William St.
1886 Prescott, William Herbert.. Forest Hills (Boston). 330 Hyde Park Av.
1901 Priest, Herbert Bancroft... Ayer.
1907 Prince, Calvin Oliver...... Plymouth. 286 Court St.
1861 Prince, James Perrott Durban, Natal,
1866 †1902 South Africa.
1879 Prince, Morton............ Boston. 458 Beacon St.
1881 Prior, Charles Edwin...... Malden. 1 Mountain Av.
1903 Pritchard, William Percival Fall River. 12 Hudner Bldg.
1896 Procter, Thomas Walter.... Sandwich.
1891 Proctor, Francis Ingersoll.. Wellesley. Office, Boston. 397 Marlboro' St.
1897 Proctor, John Donald...... Keene, N. H. 61 Winter St.
1898 Proctor, Joseph Whipple... Malden. 235 Clifton St.
1894 Proctor, Percy Clement.... Gloucester. 40 Middle St.
1907 Proctor, Thomas Melville.. Walpole.
1900 Provandie, Paul Hector.... Melrose Highlands (Melrose). 8 Ashland St.
1914 Provost, Raoul Gaston..... Taunton. State Hospital.
1912 Pulsifer, Nathan........... Lowell. 40 Middlesex St.
1910 Pulsifer, Walter Hall...... Whitman. Bank Block.
1906 Purvis, Charles Burleigh †1910 Brookline. 1455 Beacon St.
1870 Putnam, James Jackson.... Boston. 106 Marlboro' St.
1877 Putnam, Joseph Morrill.... Chelsea. West Medford (Medford). 62 Austin St.
1902 Putnam, Ralph............ Winchester. 127 Main St.
1894 Putnam, Willard Abram... Cambridge. 9 Dana St.

Q

1886 Qua, Lester Robert........ Pepperell. Main St.
1890 Quackenboss, Alexander.... Boston. 143 Newbury St.
1913 Quennell, Willard Leslie... Lynn. 193 Washington St.
1905 Quessey, Alfred Henry..... Fitchburg. 64 Prichard St.
1909 Quest, James Francis...... Dorchester (Boston). Office, Boston. 209 Huntington Av.
1869 Quinby, Hosea Mason †1911 Worcester 656 Main St.
1903 Quinby, William Carter.... Boston. 520 Commonwealth Av.
1872 Quint, Norman Perkins West Medway (Medway).
1887 †1912

R

1898 Rabe, Edith Ruth Meek Boston. 481 Beacon St.
1914 Rabinovitz, Bernard....... Springfield. 1082 North St.
1912 Rackemann, Francis Minot. Milton. Brush Hill Rd. P. O., Readville.
1892 Raddin, Frederick Stocker. Chelsea. 25 County Rd.
1892 Rand, John William........ Amesbury. 108 Main St.
1896 Rand, Richard Baxter..... North Abington. (Abington).
1897 Randall, Clifford Walcott.. Worcester. 723 Main St.
1900 Randall, George Merrill.... Lowell. 8 Merrimack St.
1896 Rawson, George Wallace... Amherst. 27 Main St.
1907 Raymond, Charles Stanley. South Hadley. 59 College St.
1908 Raymond, Katharine Piatt. Wellesley. Wellesley College.
1904 Raymond, Loring Hay..... Somerville. 144 Highland Av.
1902 Raynes, Myrton Berry..... Melrose. 42 West Emerson St.
1899 Reagh, Arthur Lincoln..... West Roxbury (Boston). 39 Maple St.
1905 Reardon, Daniel Bartholomew Quincy. 22 School St.
1893 Reardon, Timothy Joseph.. Boston. 76 Commonwealth Av.
1896 Reddy, Joseph Warren..... South Boston (Boston). 211 K St.
1873 Redfearn, Joseph.......... Marlborough. 32 West Main St.
1892 Redmond, James William.. South Boston (Boston). 512 Broadway.
1907 Redmond, Thomas Henry.. Lawrence. 256 Haverhill St.
1908 Reed, Laurence Bradford.. Plymouth. 20 North St.
1908 Reed, Lucy Carleon....... Southbridge.
1898 Reed, Victor Augustus..... Lawrence. 477 Essex St.
1883 Reed, William Gilman..... Southbridge. Main St.
1910 Reese, John Arnold......... Attleborough. 57 Bank St.
1913 Regan, James Joseph...... South Boston (Boston). 220 Dorchester St.
1912 Reggio, André William.... Boston. 40 Fairfield St.
1907 Reid, Isadore Eugene Rosenstein Jamaica Plain (Boston). Office, Boston. 43 Tremont St.
1910 Reid, William Duncan..... Newton. 36 Hyde Av.
1900 Reilly, James Aloysius..... Dorchester (Boston). 1675 Dorchester Av.
1911 Reilly, Thomas Edward.... Marlborough. 6 Newton St.
1884 Reynolds, Edward......... Boston. 321 Dartmouth St.
1889 Reynolds, Henry Vose...... Dorchester (Boston). 21 Cushing Av.
1906 Reynolds, John Timothy... Quincy. 90 Copeland St.
1913 Reynolds, Ralph Leavitte.. Waterville, Me. 207 Main St.
1866 Rice, Albert Raymond †1906 Springfield. 36 Temple St.
1906 Rice, Allen Galpin.......... Springfield. 42 Maple St.
1865 Rice, Austin Bradford †1898 Fiskdale (Sturbridge).
1866 Rice, Charles Henry....... Fitchburg. 12 Prichard St.
1893 Rice, Frederick Winslow... Brighton (Boston). 16 Elko St.
1908 Rice, John Evarts.......... Worcester. 862 Main St.
1903 Rice, Robert Astley........ Fitchburg. 2 Crescent St.
1896 Rice, Walter Henry........ Boston. 290 Newbury St.
1903 Rich, Charles Edwin....... Lynn. 56 Estes St.
1894 Richards, Caroline Maria.. New York, N. Y. 601 115th St.
1913 Richards, Cyril Godfrey.... Boston. Long Island Hospital.
1883 Richards, George Edward †1911 Boston. 11 Gloucester St.
1893 Richards, George Lyman... South Dartmouth (Dartmouth). Office, Fall River. 124 Franklin St.
1891 Richardson, Anna Gove.... Boston. 483 Beacon St.
1888 Richardson, Benjamin Franklin Lynn. 20 Silsbee St.
1903 Richardson, Charles Harper Pittsfield. 8 Bank Row.

1907	Richardson, Cheslie Alvah Clarence	West Somerville (Somerville). 731 Broadway.
1908	Richardson, Edward Peirson	Boston. 224 Beacon St.
1904	Richardson, Frank Linden	Boston. 543 Boylston St.
1906	Richardson, Horace Kimball	Bradford, Me. Box 115.
1896	Richardson, Mark Wyman	Jamaica Plain (Boston). Office, Boston. 67 Milk St, Room 23.
1913	Richardson, Oscar	Boston. 483 Beacon St.
1867	Richardson, William Lambert	Boston. 225 Commonwealth Av.
1895	Richmond, Ernest Dalton	Reading. 24 Woburn St.
1898	Richmond, Simon	Roxbury (Boston). 271 Humboldt Av.
1914	Riemer, Hugo Bruno Charles	Norwood. 62 Winter St.
1911	Riggs, Austen Fox	Stockbridge.
1910	Riley, Augustus	Boston. 536 Commonwealth Av.
1907	Riley, Charles Allen	Allston (Boston). 96 Harvard Av.
1900	Riley, Elizabeth Angela	Boston. 645 Beacon St.
1906	Riley, John Henry	North Adams. 103 Main St.
1898	Ring, Arthur Hallam	Arlington Heights (Arlington).
1906	Riordan, Walter Daniel	Lawrence. 187 Newbury St.
1883	Ripley, Frederick Jerome	Brockton. 12 Cottage St.
1904	Ripley, Horace Greeley	Taunton. State Hospital.
1903	Ripley, William Littlefield	Newton. 249 Center St.
1906	Risley, Edward Hammond	Boston. 527 Beacon St.
1904	Ritter, Henry	Springfield. 42 Main St.
1906	Roach, Alfred John	Tewksbury. State Infirmary.
1906	Robbins, Chandler	Boston. 396 Marlboro' St.
1880	Robbins, Elliott Daniels	Boston. 88 Tremont St.
1901	Robbins, Elmer Ellsworth	New Bedford. 101 School St.
1907	Robbins, Eugene Stanley	New Bedford. 17 South 6th St.
1891	Robbins, Fred Gibson	Salem. Office, Boston. 129 Marlboro' St.
1906	Robbins, William Bradford	Boston. 356 Marlboro' St.
1897	Roberts, Frederick Alpha	Pittsfield. 230 North St.
1895	Roberts, Linneus Alton	Dorchester (Boston). 699 Washington St.
1911	Robertson, Ewan Alexander	Lowell. 295 Central St.
1914	Robertson, Jessie Wilhelmine	Cambridge. 2253 Mass Av.
1895	Robey, William Henry, Jr.	Boston. 202 Commonwealth Av.
1900	Robie, Alice Hatheway Purvis	Watertown. 102 Mt. Auburn St.
1898	Robie, Walter Franklin	Baldwinsville (Templeton). Pine Terrace Sanatorium.
1914	Robins, Samuel Alexander	Lynn. Lynn Hospital.
1902	Robinson, Harry Pringle	Amesbury. 155 Main St.
1914	Robinson, Henry Ashton	Marlborough. 18 Cotting Av.
1888	Robinson, Lucy Morton †1915	Brockton. 7 Main St.
1903	Robinson, Samuel	Clifton Springs, N. Y. The Sanitarium.
1911	Robinson, Solomon	Worcester. 141 Green St.
1890	Robinson, Thomas Johns	Taunton. 56 Broadway.
1893	Robinson, William Henry	Jamaica Plain (Boston). 420 Center St.
1895	Robinson, William Perry	Haverhill. 1403 Broadway.
1883 1898	Roche, Thomas Francis	Blackstone.
1908	Roche, Thomas Neil	Amesbury. 134 Main St.
1904	Rochette, Edward Charles	Worcester. 18 Portland St.
1914	Rochford, Richard Augustine	South Boston (Boston). Carney Hospital.
1901	Rockwell, Alfred Elijah Perkins	Worcester. 248 Main St.
1901	Rockwell, Herbert George	Amherst. 25 Main St.
1912	Roddy, Martin Bernard	East Lynn (Lynn). 168 Chestnut St.
1914	Roderick, Charles Elvin	West Somerville (Somerville). 1139 Broadway.
1914	Rodger, James Yeams	Lowell. Lowell Gen. Hospital.
1903	Rodrick, Albert Fowler	Fitchburg. 38 Prichard St.
1890	Rogers, Albert Edward	Boston. 261 Beacon St.
1909	Rogers, Edmund Augustus	Brookline. 174 Harvard St.
1883	Rogers, Frank Alvin	Everett. 534 Broadway.
1914	Rogers, John Andrews	Lowell. Lowell Corp. Hospital.
1906	Rogers, Mark Homer	Allston (Boston). Office, Boston. 483 Beacon St.
1873	Rogers, Orville Forrest	Dorchester (Boston). 465 Washington St.
1914	Rogers, Orville Forrest, Jr.	Dorchester (Boston). 465 Washington St.
1890	Rolfe, William Alfred	Boston. 259 Beacon St.
1902	Rollins, Edwin Theodore	Jamaica Plain (Boston). 17 Gordon St.
1910	Rood, Adulphus Duncan	Whitman. 414 South Av.
1910	Rood, Adulphus Duncan	Dorchester (Boston). Office Boston. 419 Boylston St.
1914	Root, Raymond Richmond	Georgetown. 34 East Main St.
1868	Root, Richmond Barbour	Georgetown. North St.
1902	Rose, William Henry	Worcester. 9 Elm St.
1904	Rose, William Milton	Cambridge. 230 Prospect St.
1910	Rosen, David William	Boston. 321 Hanover St.
1911	Rosenau, Milton Joseph	Brookline. Office, Roxbury (Boston). 240 Longwood Av.
1907 1910 1914	Rosenbloom, Carl Webber	Holyoke. 245 Maple St.
1914	Rothblatt, Harry Lewis	Boston. 13 Allen St.
1907	Roughan, Charles Michael	Lowell. 29 Bridge St.
1885	Round, Arthur Morey	Norton. Taunton Av.
1914	Rounseville, Wilfred Ellsworth	Attleborough. 40 Bank St.
1906	Rowe, Carleton Allen	East Milton (Milton).
1871	Rowe, George Howard Malcolm †1911	Boston. 11 Ivy St.
1892	Rowen, Henry Stanislaus	Brighton (Boston). Office, Boston. 520 Beacon St.
1897	Rowley, William	Lanesville (Gloucester). 1087 Washington St.
1906	Roy, Joseph Napoleon	Webster. 38 Main St.
1895	Royal, Herbert Benjamin	Harvard. Still River Rd.
1868 1891	Ruddick, William Henderson †1914	South Boston (Boston). 502 Broadway.
1913	Ruel, Joseph Adjutor	Haverhill. 14 Main St.
1905	Rumrill, Samuel Dudley	Springfield. 46 Main St.
1892	Ruppel, Carl Emil Fraser	Lynn. 23 Nahant St.
1888	Ruppel, Myra Daniel	Lynn. 23 Nahant St.
1906	Rushford, Edward Allan	Salem. 175 Lafayette St.
1908	Rushmore, Stephen	Boston. 522 Commonwealth Av.
1898	Russell, Edward Ervin	North Adams. 127 River St.
1906	Russell, Frederick James	Waverley. Box C.
1871	Russell, Frederick William †1913	Winchendon. 51 Central St.
1899	Russell, Simon James	Springfield. 154 Chestnut St.
1905	Russell, Walter Burton	Springfield. 796 State St.
1904	Ruston, Warren Dunn	West Somerville (Somerville). 744 Broadway.
1886	Ryan, Dennis Matthew	Ware. 38 Pleasant St.
1910	Ryan, Sylvester Edward	Springfield. 13 Hancock St.
1912	Ryan, William Francis	Lowell. 219 Central St.
1913	Ryan, William Patrick	Holyoke. 260 Maple St.
1906	Ryder, Delano Richmond	Fall River. 124 Franklin St.
1901	Ryder George Hale	Quincy. Office, Boston. 583 Beacon St.
1882	Ryder, Godfrey	Malden. 321 Pleasant St.
1914	Ryder, Walter Irenaeus	South Boston (Boston). 576 Broadway.

S

1873	Sabine, George Krans	Brookline. 30 Irving St.
1898	Sabine, Jane Downes Kelly	Boston. 348 Marlboro' St.
1911	Sadler, Roy Angelo	Boston. 1750 Washington St.

1904 Safford, Wilber Pray. Brockton. 52 Pleasant St.
1895 St. Clair, Austin Emery. Framingham. Office, Boston. 416 Marlboro' St.
1894 St. Denis, Joseph Nelson. Mattapan (Boston). 32 Houston Av.
1893 St. Germain, Joseph Pierre. New Bedford. 13 South 6th St.
1912 Salles, John Murray. New Bedford. 113 Grinnell St.
1909 Sanborn, Byron. Topsfield. Central St.
1876 Sanborn, Edwin Aaron †1915. Somerville. 24 Franklin St.
1883, 1888 Sanborn, Frederick James. Spencer. Main St.
1903 Sanborn, Frederick Rodney. New York, N. Y. 1 Gramercy Park.
1902 Sanborn, George Phippen. Brookline. Office, Boston 366 Commonwealth Av.
1897 Sanborn, John Wesley. Roxbury (Boston). 168 Humboldt Av.
1881 Sanborn, Perley Lewis. Marblehead. 79 Pleasant St.
1870 Sanders, Charles Barton †1909 Lowell. 475 Westford St.
1909 Sandler, Samuel. Fall River. 298 Third St.
1904 Sanger, Guy Edward. Arlington. 707 Mass. Av.
1893 Sargent, Ara Nathaniel. Salem. 116 Federal St.
1889 Sargent, George Amory. Boston. 46 Hereford St.
1896 Sargent, George Bancroft. Lawrence. 51 Jackson St.
1907 Sargent, Oscar Franklyn Libbey Lawrence. 105 Exeter St.
1905 Sargent, Walter Leslie. Quincy. 1155 Hancock St.
1913 Saunders, Edmund Louis. Boston. 46 Gloucester St.
1908 Savignac, Arthur Noël. Amesbury. 80 Friend St.
1896 Saville, Sumner Carruth. Boston. 34 Newbury St.
1884 Sawin, Charles Dexter. Somerville. 390 Broadway.
1892 Sawin, Robert Valentine. Brimfield.
1907 Sawyer, Alpha Reuben. Roslindale (Boston). 6 Conway St.
1883 Sawyer, Edward Allen. Gardner. 402 Elm St.
1901 Sawyer, Edward Keyes. Boston. 419 Boylston St.
1884 Sawyer, Elihu LeRoy. Roslindale (Boston). 6 Conway St.
1891 Sawyer, Walter Fairbanks. Fitchburg. 67 Prichard St.
1888 Sayles, Joseph Borland. Taunton. 35 City Square.
1896 Scales, Robert Bass. Dorchester (Boston). 546 Washington St.
1912 Scanlan, Maurice Thomas. Dorchester (Boston). 137 Dakota St.
1905 Scanlan, Thomas John. Dorchester (Boston). Office, Boston. 543 Boylston St.
1903 Scannell, David Daniel. Boston. 366 Commonwealth Av.
1906 Scannell, James Joseph. Mattapan (Boston). Office, Boston. City Hall Annex.
1912 Schadt, George Leonard. Springfield. 850 Central St.
1910 Schillander, Carl Axel. Springfield. 298 Bridge St.
1910 Schirmer, Joseph Walter. Needham. Office, Boston. 272 Newbury St.
1900 Schmidt, Frederick Sextus. Roxbury (Boston). 179 School St.
1906 Schmidt, Richard Diedrich. Dorchester (Boston). 16 River St.
1909 Schneider, Harry Albert. Pittsfield. 30 North St.
1898 Schneider, Jacob Philip. Palmer. 10 Thorndike St.
1905 Schofield, Otho Lester. Wellesley Hills (Wellesley).
1900 Schorer, Cornelia Bernhardine Johanna Roxbury (Boston). 74 Fenwood Rd.
1879 Schwab, Emanuel. Cincinnati, O. 2732 Woodburn Av.
1907 Schwartz, Myer. Lawrence. 261 Common St.
1895 Scoboria, Arthur Gilmore. Chelmsford.
1885 Scofield, Walter W. Dalton. Main St.
1910 Scott, George Henry. Roxbury (Boston). 314 Warren St.
1882 Scribner, Ernest Varian. Worcester. State Hospital.
1887 Scudder, Charles Locke. Boston. 209 Beacon St.
1884 Sears, George Gray. Boston. 426 Beacon St.
1897 Sears, Harry Edward. Beverly. 25 Broadway.
1887 Sears, Henry Francis. Boston. 86 Beacon St.
1903 Sears, Julia Seton. Address unknown.
1900 Sears, Stephen Hull. Yarmouth Port (Yarmouth).
1905 Seaver, Edwin Pliny, Jr. New Bedford. 179 William St.
1914 Seavy, Horace Lester. Cambridge. 1 Frost St.
1889 Seelye, Ralph Holland. Springfield. 73 Chestnut St.
1902 Seelye, Walter Clark. Worcester. 390 Main St.
1905 Segur, Willard Blossom. Enfield. Bridge St.
1908 Senesac, Archibald Napoleon New Bedford. 1007 South Water St.
1914 Sennott, John Ralph. Cambridge. 321 Broadway.
1901 Sever, James Warren. Cambridge. Office, Boston. 234 Marlboro' St.
1913 Sewall, Edgar Floyd. Somerville. 258 Broadway.
1869 Seymour, Christopher †1908 Northampton. 79 Elm St.
1904 Seymour, Malcolm. Boston. 362 Commonwealth Av.
1911 Shadman, Alonzo Jay. West Roxbury (Boston). 1857 Center St.
1881 Shanahan, John. Peabody. 69 Main St.
1896 Shanahan, Thomas Joseph. Brookline. 155 Aspinwall Av.
1910 Shanahan, Timothy Joseph. Somerville. Office, Boston. 419 Boylston St.
1913 Shannahan, Richard Joseph Worcester. 925 Main St.
1894 Shannon, Nat Vaughan. Cambridge. 891 Mass. Av.
1914 Shapira, Victor Isaiah. Dorchester (Boston). Office, Boston. 160 Huntington Av.
1891 Shatswell, James Arthur. Beverly. 9 Endicott St.
1895 Shattuck, Albert Milo. Worcester. 21 High St.
1873 Shattuck, Frederick Cheever Boston. 135 Marlboro' St.
1873 Shattuck, George Brune. Boston. 183 Beacon St.
1908 Shattuck, George Cheever. Boston. 205 Beacon St.
1912 Shaughnessy, Thomas Ahern Leominster. 62 Main St.
1907 Shaw, Adam Ernest. Lowell. 137 Merrimack St.
1893 Shaw, Albert Joel. Boston. 79 Mountfort St.
1893 Shaw, Arthur John. Boston. 551 Boylston St.
1904 Shaw, John Port. Brockton. 6 North Main St.
1909 Shaw, John William. Newburyport. 7 Orange St.
1897 Shaw, Thomas Bond. Worcester. 24 Oxford St.
1877 Shaw, Thomas Pierpont †1909 Lowell. 110 Eighteenth St.
1913 Shaw, Walter Augustus. Springfield. 105 Ashley St.
1908 Shay, Charles Edwin. Roxbury (Boston). 136 Warren St.
1895 Shay, Thomas Maguire. Roxbury (Boston). 88 Warren St.
1897 Shea, John Joseph. Beverly. 14 Bartlett St.
1906 Shea, Michael Ignatius. Chicopee Falls (Chicopee). 112 Belcher St.
1902, 1912 Shea, Peter Owen. Worcester. 106 Millbury St.
1895 Shea, Thomas Bernard. Boston. 74 Marlboro' St.
1909 Sheahan, George Maurice. Quincy. 12 School St.
1897 Sheehan, Martin David. Stoneham. 34 Pleasant St.
1893 Sheehan, William Joseph. Salem. 146 Federal St.
1905 Sheehan, William Joseph. South Boston (Boston). 197 Broadway.
1876 Sheldon, Chauncey Coolidge Lynn. 73 North Common St.
1912 Sheldon, Russell Firth. Boston. 30 Pinckney St.
1911 Sheppard, Philip Albert Edward Dorchester (Boston). 24 Monadnock St.
1912 Shepherd, William Gordon. Lynn. 121 North Common St.
1904 Sherburne, Andrew Edward Dorchester (Boston). 46 Brent St.
1913 Sheridan, Philip Edward Anthony South Boston (Boston). 580 Broadway.
1882 Sherman, Frank Morton. West Newton (Newton). 11 Fairview Ter.
1894 Sherman, Mary Hastings. Brookfield.
1907 Sherman, Warren Hunter. Westford.
1914 Shields, Ellwood Emlen. Annisquam (Gloucester). 89 Leonard St.
1910 Shoemaker, Amzi Bedell. North Attleborough. 123 Commonwealth Av.

1906 Shohan, Joseph............Roxbury (Boston). 156 Humboldt Av.
1905 Shoninger, Lee Simon......New York, N. Y. 64 West 56th St.
1894 Shores, Harvey Towle......Northampton. 78 Main St.
1869 Shreve, Octavius Barrell †1906 Salem. 29 Chestnut St.
1914 Shulman, David Hermann..Roxbury (Boston). 106 Humboldt Av.
1897 Shultis, Frederick Charles..Leominster. 20 Main St.
1908 Sibley, Benjamin Ernest...Brookline. 1595 Beacon St.
1881 Sidney, Austin Wilbur †1895 Fitchburg. 24 Holt St.
1896 Silva, Francis Pierce.......Charlestown (Boston). 206 Main St.
1901 Simmons, Channing Chamberlain Boston. 317 Marlboro' St.
1914 Simmons, Edward Burnside.Worcester. 7 Jaques Av.
1905 Simmons, Fred Albert.....Brockton. 63 Main St.
1903 Simmons, Hannah Coralynn Worcester. 7 Jaques Av.
1914 Simmons, Ralph Hayward..Fall River. Union Hospital.
1912 Simon, Arthur Leslie......Lawrence. 24 Buswell St.
1910 Simonds, Otis Franklin....Philadelphia, Pa. Wells Hospital.
1885 Simpson, Charles Edward..Lowell. 9 Central St.
1890 Simpson, James Edwin.....Salem. 26 Chestnut St.
1903 Sims, Frederick Robertson.Melrose. 79 West Foster St.
1905 Sinclitico, Guiseppe........Lawrence. 3 Jackson Ter.
1903 Sise, Lincoln Fleetford.....Medford. 12 Main St.
1896 Siskind, Alexander Louis...Lawrence. 272 Broadway
1913 Sisson, Mitchell...........East Boston (Boston). 26 Princeton St.
1863 Skinner, Edward Manning †1903 Boston. 586 Mass. Av.
1904 Slack, Francis Hervey.....Hyde Park (Boston). Office, Boston. City Hall Annex.
1910 Slater, Eleanor Mary......Denton, Texas. College of Industrial Arts.
1913 Slattery, John Richard....South Boston (Boston). Office, Boston. 520 Beacon St.
1905 Sleeper, Frank Warren....Dorchester (Boston). 41 Virginia St.
1906 Slutskin, Maurice Louis....Springfield. 120 Main St.
1900 Small, Albert Ernest.......Melrose. 90 West Emerson St.
1908 Smalley, Fred Lyman......Reading. 13 Hampden St.
1898 Smith, Alfred Charles......Brockton. 7 Main St.
1893 Smith, Charles Morton.....Boston. 437 Marlboro' St.
1900 Smith, Charlotte Stewartson Manchester, N. H. 83 Hanover St.
1914 Smith, Conrad.............Boston. 143 Newbury St.
1901 Smith, Edward Shepard....Westfield. 3 Court St.
1912 Smith, Edwin Wallace......Boston. 19 Bay State Rd.
1902 Smith, Forster Hanson.....Lowell. 832 Merrimack St.
1900 Smith, Frank Herbert.....Hadley.
1894 Smith, Frank Simpson.....Address unknown.
1895 Smith, Fred Stevens.......North Andover. 5 Third St.
1894 Smith, Frederick Glazier..Somerville. 145 Highland Av.
1882 Smith, George Carroll.....Boston. 416 Marlboro' St.
1910 Smith, George Gilbert.....Boston. 309 Marlboro' St.
1903 Smith, Hervey Lewis......Springfield. 249 Union St.
1885 } 1892 } Smith, Hiram Fred Markley { Orange. 155 South Main St.
1901 Smith, Howard Harry.....Boston. 845 Boylston St.
1906 Smith, John Hall.........Roslindale (Boston). Office, Boston. 419 Boylston St.
1910 Smith, John Jay..........Cambridge. 89 Inman St.
1887 Smith, Mary Almira.......Boston. 33 Newbury St.
1889 Smith, Murdoch Campbell..Lynn. 3 Lee Hall.
1906 Smith, Myrtle............Worcester. 831 Main St.
1897 Smith, Peter Matthew.....Boston. 758 Tremont St.
1908 Smith, Richard Mason.....Boston. 329 Beacon St.
1874 Smith, Samuel Finley......Indian Orchard (Springfield). 97 Myrtle Av.
1906 Smith, Stafford Baker.....New York, N. Y. Hotel Bretton Hospital
1903 Smith, Theobald..........Jamaica Plain (Boston). Office, Roxbury. 240 Longwood Av.
1894 Smith, Thomas Burke.....Lowell. 107 Merrimack St.
1884 Smith, Walter Anson.......Springfield. 185 State St.
1914 Smith, William Benjamin Tyng Bondsville (Palmer).
1914 Smith, William David.....Boston. 99 Commonwealth Av.
1914 Smith, William Francis....Malden. 14 Wentworth Court.
1898 Smith, William Henry.....Boston. 10 Gloucester St.
1891 Smith, William Lord......North Grafton (Grafton). Office, Boston. 2 Newbury St.
1894 Smithwick, Marsena Parker Lexington. Office, Boston. 483 Beacon St.
1902 Smyser, Charles James....Harwich.
1911 Smyth, Duncan Campbell..Brookline. Office, Boston. 127 Newbury St.
1905 Smyth, Patrick Somers....Brookline. Office, Boston. 69 Newbury St.
1903 Snow, Frank Whipple......Newburyport. 24 Essex St.
1899 Snow, Frederick Stedman..Roxbury (Boston). 166 Townsend St.
1908 Sobotky, Irving............Boston. 366 Commonwealth Av.
1876 Somers, John Edward......Cambridge. 1979 Mass. Av.
1894 Sopher, Curtis Levi........Wakefield. 6 Avon St.
1897 Soule, Horace John........Winthrop. 180 Winthrop St.
1904 Southard, Elmer Ernest...Cambridge. Office, Roxbury (Boston). 240 Longwood Av.
1904 Southard, Mabel Austin....Cambridge. 70 Francis Av.
1900 Soutter, Robert............Boston. 133 Newbury St.
1904 Spaid, Charles Jacob.......Springfield. 344 Belmont Av.
1897 Spalding, Fred Maurice....Brookline. Office, Boston. 390 Commonwealth Av.
1903 Spalding, Roger...........Duxbury. Washington St.
1884 Sparhawk, Clement Willis.Danvers. 148 Locust St.
1914 Sparks, Ernest Elliot......Cochituate (Framingham). Main St.
1910 Sparrow, Charles Atsatt..Worcester. 1 Main St.
1910 Spaulding, Edith Rogers...Framingham. P. O. Box 99.
1911 Spaulding, John Doliver Mansfield. Office, Boston. 360 Commonwealth Av.
1874 Spear, Edmund Doe........Jamaica Plain (Boston). Office, Boston. 100 Boylston St.
1907 Spear, Louis Mahlon.......Brookline. Office, Boston. 483 Beacon St
1909 Spooner, Lesley Hinckley..Boston. 260 Clarendon St.
1865 Sprague, Francis Peleg.....Boston. 229 Commonwealth Av.
1873 } 1891 } Sprague, Rufus William { Charlestown (Boston). 376 Main St.
1913 Sprague, Russell Bradford.Boston. 514 Commonwealth Av.
1904 Sproull, John.............Haverhill. 50 Merrimack St.
1879 Squier, Angelo Orin........Springfield. 293 Bridge St.
1892 Stacey, Charles Franklin...Boston. 456 Audubon Rd.
1902 Stack, Charles Francis.....Hyde Park (Boston). 1315 River St.
1908 Stack, John Joseph........Dorchester (Boston). Office, Boston. 1 Beacon St.
1913 Stafford, Frank Dalmon....North Adams. 56 Summer St.
1880 Standish, Myles...........Boston. 72 St. James Av.
1909 Stanley, Francis Guy......Beverly. 144 Cabot St.
1895 Stanley, Josiah Murch.....Northborough. Main St.
1907 Stansfield, Clarence Winfield Fall River. 1274 North Main St.
1903 Stanton, Joseph...........Newton. 433 Washington St.
1908 Stanwood, Frederic Arthur.Wellesley Hills (Wellesley). 342 Washington St.

1905	Staples, Clarence Hathorne	Malden. 339 Pleasant St.
1912	Staples, Hall	West Acton (Acton).
1893	Stapleton, Richard Henry	Worcester. 48 Trumbull St.
1893	Starbird, Edward Perley	Dorchester (Boston). 9 Monadnock St.
1910	Stearns, Albert Warren	Billerica. Office, Boston. 520 Commonwealth Av.
1903	Stearns, Robert Thomas	Mattapan (Boston). 24 Hazelton St.
1868	Stebbins, George Stanford †1905	Springfield. 17 Maple St.
1874	Stedman, George	Boston. 380 Newbury St.
1874	Stedman, Henry Rust	Brookline. Office, Boston. 48 Beacon St.
1892	Stedman, Joseph Cyrus	Jamaica Plain (Boston). 7 Lakeville Pl.
1901	Steele, Albert Edward	Roslindale (Boston). 79 Robert St.
1913	Steeves, Ernest Colpitt	Essex. Main St.
1907	Stephens, Frederick Newton	Somerville. 435 Medford St.
1883	Stephenson, Franklin Bache †1913	U. S. Navy (retired). Pittsfield. 146 Bartlett Av.
1914	Sternberg, Joseph Edward	Roxbury (Boston). 244 Warren St.
1898	Stetson, Frank Eliot	New Bedford. 334 Union St.
1898	Stetson, Frederick Winslow	Roxbury (Boston). 504 Warren St.
1896	Stetson, Halbert Greenleaf	Greenfield. 17½ Federal St.
1869	Stevens, Andrew Jackson †1912	Malden. 539 Main St.
1894	Stevens, Charles Benjamin	Worcester. 61 Pearl St.
1868	Stevens, Edmund Horace	Cambridge. 1911 Mass. Av.
1874	Stevens, George Beckwith †1911	Dorchester (Boston). 346 Seaver St.
1906	Stevens, Harold Elmer Ellsworth	Lewiston, Me. 374 Main St.
1897	Stevens, Henry Burt	West Roxbury (Boston). Office, Boston. 419 Boylston St.
1891	Stevens, Henry Lawrence	New Bedford. 129 Purchase St.
1908	Stevens, Horace Paine	Cambridge. 14 Garden St.
1899	Stevens, Ralph Emerson	Marlborough. 133 West Main St.
1897	Stevens, Sara Elmina	West Roxbury (Boston). 31 Linnet St.
1886	Stevens, Seriah	Roslindale (Boston). 942 South St.
1883	Stevens, William Caldwell	Worcester. 17 Russell St.
1883 1913	Stevens, William Stanford	Boston. 295 Beacon St.
1914	Stevenson, Effie Allyne	North Grafton (Grafton). State Colony.
1904	Stevenson, Willis Mack	North Easton (Easton). Lincoln St.
1909	Stewart, Ralph Carroll	Lowell. 408 Middlesex St.
1909	Stewart, Vernon Champney	Woburn. 16 Summer St.
1903	Stick, Henry Louis	Worcester. State Asylum.
1881	Stickney, Clifford Webster	Holden. Main St.
1892	Stickney, Edwin Pangman	Arlington. 58 Pleasant St.
1884	Stickney, George Augustus	Beverly. 205 Cabot St.
1891	Stiles, Fred Merritt	Waltham. 292 Moody St.
1908	Still, Carroll Wilder	Haverhill. 156 Main St.
1880	Stimson, John Woodbury	Fitchburg. 101 Prichard St.
1907	Stockbridge, Alberto Horatio	Lynn. 69 Park St.
1899 1911	Stockwell, Edgar Washburn	Great Barrington. 6 Church St.
1899	Stockwell, Herbert Emmons	Stockbridge. Main St.
1899	Stoddard, Mortimer Joseph	Springfield. 106 Bay St.
1914	Stokes, Leroy Tyler	Haverhill. 355 Washington St.
1887	Stone, Arthur Kingsbury	Boston. 44 Fairfield St.
1893	Stone, Byron	North Oxford (Oxford).
1913	Stone, Charles Edwin	Lynn. 145 No. Common St.
1885	Stone, Charles Sinclair	Boston. 752 Tremont St.
1886	Stone, Frank Ellsworth	Lynn. 92 So. Common St.
1889	Stone, George Arthur	Pigeon Cove (Rockport).
1910	Stone, George Henry	Boston. City Hospital.
1914	Stone, Henry Edward	Dorchester (Boston). 41 Fowler St.
1894	Stone, James Savage	Boston. 234 Marlboro' St.
1912	Stone, Jane Gray	Jamaica Plain (Boston). 821 Center St.
1854	Stone, Lincoln Ripley †1907	Newton. 131 Vernon St.
1896	Stone, Moses Cornelius †1908	Wellesley. 18 Belair St.
1905	Stone, Ralph Edgarton	Beverly. 360 Cabot St.
1909	Stone, Thomas Newcomb	Haverhill. 28 White St.
1905	Stoneman, Edgar Amos	Springfield. 14 Clinton St.
1904	Stoodley, Harry Marr	Somerville. 283 Highland Av.
1888	Storer, Malcolm	Boston. 476 Boylston St.
1906	Storrs, Henry Randolph	Vancouver, B. C. 342 Bender St.
1891	Stowell, Edmund Channing	Dublin, N. H.
1903	Stowell, Frank Edgar	Worcester. 120 Main St.
1895	Stowell, Joab	North Amherst (Amherst).
1892	Stowell, Sarah Russell	Dublin, N. H.
1902	Stratton, Ralph Ricker	Melrose. 654 Main St.
1904	Street, Charles Edward	Springfield. 2 Maple St.
1900	Street, Lionel Alexander Burnet	Shanghai, China. 39 Peking Rd.
1914	Streeter, Edward Clark	Boston. 413 Beacon St.
1905	Streeter, John Frank	Springfield. 55 Walnut St.
1913	Strom-Lindsay, Marie	Tewksbury. State Inf.
1913	Strong, Richard Pearson	Boston. Office, Roxbury. 240 Longwood Av.
1886	Stuart, Frederic William	South Boston (Boston). 550 Broadway.
1880 1890	Stuart, James Henry	Boston. 236 Clarendon St.
1898	Stubbs, Frank Raymond	Newton. 510 Center St.
1898	Sturgis, Benjamin Franklin, Jr.	Salem. 28 Pleasant St.
1896	Sturgis, Walter Horatio Wakeman	Allerton (Hull).
1905	Sturnick, Max	Dorchester (Boston). 12 Columbia Rd.
1892	Stutson, William Peckham †1915	Cummington. Main St.
1899	Sughrue, Dennis Francis	Roxbury (Boston). 430 Dudley St.
1911	Suitor, Henry Albert	South Deerfield (Deerfield). Graves Av.
1910	Sullivan, Andrew Joseph	Brockton. 155 Main St.
1907	Sullivan, Charles Brent	Boston. 520 Beacon St.
1906	Sullivan, Cornelius Augustine	South Braintree (Braintree). 835 Washington St.
1903 1914	Sullivan, Edward Coppinger	Springfield. 317 Main St.
1903	Sullivan, Florence Augustine	Haverhill. 42 White St.
1914	Sullivan, Francis Augustus	Cambridge. 376 Cambridge St.
1883	Sullivan, James Edmund	Providence, R. I. 254 Wayland Av.
1883	Sullivan, James Francis	Lowell. 230 Pawtucket St.
1901	Sullivan, John Joseph	Dorchester (Boston). 93 Bowdoin St.
1907	Sullivan, John Thomas	Dorchester (Boston). Office, Boston. 520 Beacon St.
1913	Sullivan, Joseph Cornelius	Springfield. Mercy Hosp.
1905	Sullivan, Joseph Lawrence	Roxbury (Boston). 89 Waverley St.
1913	Sullivan, Leo Jeremiah	Fall River. 379 Whipple St.
1909	Sullivan, Martin George	Winchendon. 216 Central St.
1891	Sullivan, Michael Francis	Lawrence. 281 Oak St.
1913	Sullivan, Patrick Joseph	Dalton. 10 Carson Av.
1889	Sullivan, William Joseph	Lawrence. 267 Essex St.
1901	Sumner, Harry Herbert	Lowell 4 Merrimack Sq.
1896	Sumner, Philip Sosnoski	Boston. 28 Westland Av.
1910	Supple, Edward Augustine	Boston. 409 Marlboro' St.
1900	Swain, Howard Townsend	Boston. 226 Commonwealth Av.
1865	Swan, Charles Walter †1903	Lowell. 119 Livingstone Av.
1908	Swan, Lawrence Clarke	Beverly. 23 Bow St.

1882	Swan, Roscoe Wesley	Worcester. 41 Pleasant St.
1885	Swan, William Donnison	Cambridge. 167 Brattle St.
1913	Swanson, Axel Fridolf	Cummington.
1891	Swasey, Edward	Worcester 390 Main St.
1863	Swasey, Oscar Fitzallan †1900	Beverly. 24 Hale St.
1912	Sweeney, Bartholomew Philip	Fitchburg. 252½ Water St.
1908	Sweeney, Edward Joseph	Springfield. 2½ Main St.
1911	Sweeney, Michael Thomas	Norfolk Downs (Quincy). Hancock St.
1895	Sweet, Frederick Benoni	Springfield. 81 Chestnut St.
1893	Sweetsir, Charles Leslie	Lowell. 276 Westford St.
1889	Sweetsir, Frederick Ellsworth	Merrimac.
1907	Swift, Edith Hale	Boston. 110 Bay State Road.
1901	Swift, Henry Marshall	Portland, Me. 30 Deering St.
1910	Swift, John Baker	Boston. 421 Marlboro' St.
1908	Swift, Milne Barker	Fall River. 489 Walnut St.
1907	Swift, Walter Babcock	Boston. 110 Bay State Road.
1905	Sylvester, Albie Warren	Pittsfield. 150 North St.
1901	Sylvester, Charles Porter	Hull. Office, Boston. 460 Audubon Road.
1914	Sylvester, Nathan Rowland, Jr.	West Somerville (Somerville). 1121 Broadway.
1907	Sylvester, Philip Haskell	Newton Center (Newton). 866 Beacon St.
1893	Sylvester, William Hillman	Natick. 6 Clarendon St.
1900	Symonds, Alice Gertrude	Haverhill. 175 Main St.
1893	Synan, William Edward	Fall River. 620 William St.

T

1897	Taft, Albert Atherton	Keene, N. H. 56 Court St.
1906	Talbot, Fritz Bradley	Boston. 311 Beacon St.
1883	Tallman, Augustus Littlefield	East Boston (Boston). 9 Princeton St.
1894	Taylor, Edward Wyllys	Boston. 457 Marlboro' St.
1903	Taylor, Erwin Hartwell	Pittsfield. 316 North St.
1882	Taylor, Frederic Weston	Cambridge. 1735 Mass. Av.
1901	Taylor, Frederick Leon	Jamaica Plain (Boston). 321 Center St.
1893	Taylor, George Lyman	Holyoke. 247 Maple St.
1900	Taylor, James, Jr.	Worcester. 49 Pearl St.
1888	Taylor, Jubal George	Brookline. 437 Harvard St.
1909	Taylor, Roy Arnold	Waltham. 266 Moody St.
1908	Taylor, Walter	Florence (Northampton). 70 Maple St.
1908	Teahan, William	Holyoke. 245 Maple St.
1909	Tedford, Ada Helena	Woburn. 51 Pleasant St.
1880	Temple, William Franklin	Boston. 499 Beacon St.
1913	Temple, William Franklin, Jr.	Boston. 499 Beacon St.
1914	Ten Broeck, Carl	Boston. 2 Walnut St.
1893	Ten Broeck, Stanton Jacob	Orange. 15 Grove St.
1891	Tenney, Benjamin	Boston. 308 Marlboro' St.
1886	Tenney, John Arthur	West Roxbury (Boston). Office, Boston. 419 Boylston St.
1894	Tenney, William Northend	Canton. Office, Boston. 419 Boylston St.
1913	Tennis, Matthew Nicholas	Fall River. Union Hosp.
1892	Thayer, Eugene	Roxbury (Boston). Office, Boston. 419 Boylston St.
1882	Thayer, George Dickinson	Northampton. 75 South St.
1901	Thayer, Hartley Wales	Newtonville (Newton). 355 Walnut St.
1914	Thom, Douglas Armour	Monson. State Hospital.
1894	Thomas, Caroline Louise	Malden. 43 Florence St.
1911	Thomas, Charles Holt	Cambridge. 1718 Mass Av.
1912	Thomas, Elmer Ellsworth	Northampton. 160 Main St.
1889	Thomas, John Jenks	Boston. 88 Bay State Rd.
1911	Thomas, William Kilpack Smith	Cambridge. 1718 Mass. Av.
1897	Thomes, John Blanchard	Pittsfield. 86 North St.
1914	Thompson, Charles Arthur	Newton Highlands (Newton). 1099 Walnut St.
1903	Thompson, Charles Edward	East Gardner (Gardner). State Colony.
1891	Thompson, Charles Oscar	Boston. 589 Beacon St.
1870	Thompson, Frederick Henry	Fitchburg. 3 Pleasant St.
1904	Thompson, Frederick Henry, Jr.	Fitchburg. 168 Prichard St.
1906	Thompson, George Hocken	North Adams. 18 Ashland St.
1896	Thompson, John Joseph	Webster. 16 Lake St.
1898	Thompson, Peter Hunter	Boston. 308 Commonwealth Av.
1899	Thompson, Richard Henry	Malden. 82 Summer St.
1904	Thompson, Wellington Andrew	Manchester, N. H. 6 Main St.
1899	Thorn, Edwin Cyrus	Deerfield.
1887	Thorndike, Augustus	Boston. 601 Beacon St.
1887	Thorndike, Paul	Boston. 24 Marlboro' St.
1903	Thorndike, Townsend William	Boston. 20 Newbury St.
1893	Thornton, James Brown	Boston. 168 Huntington Av.
1911	Thorpe, Burton Durrell	Newport, N. H.
1907	Thurber, Madison Templeton	Dorchester (Boston). 91 Savin Hill Av.
1890	Tibbetts, James Thomas	Mineola, N. Y.
1890 1904	Tigh, Frederick	Newburyport. 134 High St.
1908	Tighe, Michael Aloysius	Lowell. 9 Central St.
1876	Tilden, Frank Elmer	North Easton (Easton). 9 Canton Road.
1899	Tilden, Irving Niles	Mattapoisett. Barstow St.
1913	Tilton, Earle Edward	Allston (Boston). Office, Boston. 483 Beacon St.
1892	Tilton, Frank Herbert	East Boston (Boston). 15 Princeton St.
1882	Tilton, Josiah Odin	Lexington.
1911	Timmins, Edward Francis	South Boston (Boston). 527 Broadway.
1901	Tingley, Louisa Paine	Boston. 9 Mass. Av.
1906	Tinkham, Oliver Goldsmith	Brighton (Boston). Office, Boston. 527 Beacon St.
1893	Tirrell, Vinson Meader	South Weymouth (Weymouth).
1881	Titcomb, George Eugene	Concord. 7 Sudbury St.
1912	Titus, Raymond Stanton	Boston. 31 Mass. Av.
1902	Tobey, Edward Nelson	St. Louis, Mo. 3634 Shenandoah Av.
1880	Tobey, George Loring	Clinton. 205 Church St.
1907	Tobey, George Loring, Jr.	Boston. 416 Marlboro' St.
1886	Tolman, Julia	Arlington. 695 Mass. Av.
1913	Tomkies, James Scott	Rochester, Minn. St. Mary's Hospital.
1906	Toohey, Thomas Victor	Brookline. Office, Roxbury (Boston). 129 St. Alphonsus St.
1911	Toppan, Roland Lesley	Newburyport. 31 Green St.
1904	Torbert, James Rockwell	Boston. 252 Marlboro' St.
1914	Torney, George Henry	Brookline. Bournewood Hospital.
1913	Torrey, Arthur Stanley	Gloucester. 164 East Main St.
1896	Torrey, John Paine	Andover. 15 Elm St.
1872	Torrey, Samuel William †1909	Beverly. 108 Cabot St.
1905	Tower, Freeman Augustus	Derry, N. H.
1914	Towle, Clarence Clarke	Somerville. 24 Prospect Hill Av.
1908	Towle, Edwin Dudley	Salem. 2 Mason St.
1891	Towle, Harvey Parker	Boston. 453 Marlboro' St.
1877	Towle, Henry Charles	Dorchester (Boston). 1428 Dorchester Av.
1885	Townsend, Charles Wendell	Boston. 76 Marlboro' St.
1901	Townsend, David	River Glade, N. B.
1901	Tozier, Charles Herman	Winchester. Office, Boston. 100 Boylston St.
1891	Tracy, Edward Aloysius	South Boston (Boston). 489 Broadway.
1905	Tracy, John Matthew	Springfield. 166 Chestnut St.
1887	Tracy, Thomas Henry	Address unknown.

1910 Tracy, William Leighton...Pittsfield. 8 Bank Row.
1901 Trainor, John Brett.......Fall River. 1515 South Main St.
1906 Trainor, Joseph Aloysius...Cambridge. 103 Belmont St.
1906 Trask, John Wilson........Lynn. 171 Lewis St.
1906 Trayes, William Henry, Jr..Boston. 511 Mass. Av.
1894 Treanor, John Peter.......Dorchester (Boston). 3 Howes St.
1912 Tripp, Edwin Prescott.....Falmouth. Locust St.
1897 Tripp, George Alston......Worcester 477 Cambridge St.
1854 Trow, William Marshall †1892 Newtonville (Newton). 95 Highland Av.
1885 Trowbridge, Edward Henry Worcester. 58 Pleasant St.
1893 Trueman, Harmon Silas...Somerville. 145 Sumner St.
1903 Truesdale, Philemon Edwards Fall River. 151 Rock St.
1868 Trull, Washington Benson †1912 Boston. 18 West Cedar St.
1909 Tryon, Geneva.............Address unknown.
1906 Tucker, Arthur Wallace....Lynn. 285 Western Av.
1875 Tucker, Edward Tobey †1915.....New Bedford. 258 Pleasant St.
1908 Tucker, George Everett....Salem. 86 Federal St.
1894 Tucker, Samuel Chase.....Peabody. 16 Chestnut St.
1911 Tuholski, David Benjamin..Brockton. 105 Main St.
1891 Tully, Edward Joseph......Fitchburg. 98 Prichard St.
1875 Tupper, Augustus Maclauchlan Rockport. Main St.
1914 Turetsky, William Leo....Dorchester (Boston). 1071 Blue Hill Av.
1912 Turnbull, Frederick Myles.Allston (Boston). 40 Harvard Av.
1912 Turnbull, John Archibald Jamaica Plain (Boston). 77 Center St.
1907 Turner, Charles Sampson..Providence, R. I. 532 Prairie Av.
1910 Turner, William Kenneth..New Bedford. 1105 Acushnet Av.
1887 Tuttle, Albert Henry......Cambridge. Office, Boston. 1069 Boylston St.
1879 Tuttle, George Thomas....Waverley (Belmont). McLean Hospital.
1885 Twitchell, Edward Thayer.Dorchester (Boston). 25 Alban St.
1882 Twitchell, George Pierce...Greenfield. 17½ Federal St.
1886 Twombly, Edward Lambert Boston. 416 Marlboro' St.
1905 Tyler, Winsor Marrett.....Lexington. 454 Mass. Av.
1910 Tynan, Joseph Patrick.....South Boston (Boston). 499 Broadway.
1904 Tyrode, Maurice Paul Octave Véjux Boston. 416 Marlboro' St.
1906 Tyzzer, Ernest Edward....Wakefield. Office, Roxbury (Boston). 240 Longwood Av.

U

1912 Underhill, Elizabeth Colden South Hadley. Mt. Holyoke College.
1884 Underwood, George Baker.Gardner. 105 Central St.
1858 Underwood, George Latham †1898 Belmont. 5 Common St.
1914 Uniac, Thomas Vincent....Lawrence. 131 Haverhill St.
1897 Upton, Charles Louis......Shelburne Falls (Shelburne). Main St.
1904 Urquhart, John Edwin.....Ashfield.

V

1893 Valentine, Henry Charles..Lexington.
1892 Van Allen, Harvey Ward..Springfield. 19 Maple St.
1908 Van Nüys, Fresenius......Weston. Central Av.
1914 Varney, Elton Murray.....Peabody. 72 Main St.
1895 Varney, Fred Elbridge.....North Chelmsford (Chelmsford).
1897 Vaughan, Jonas Hobart....Tampa, Fla. 214 South Brevard Av.
1912 Verde, Luigi..............Cambridge. Office, Boston. 372 Hanover St.
1902 Verhoeff, Frederick Herman Boston. 101 Newbury St.
1882 Vickery, Herman Frank....Boston. 263 Beacon St.
1892 Vickery, Lucia Florence...Jamaica Plain (Boston). 27 Lakeville Place.
1897 Vietor, Agnes Caecilia.....Boston. 175 Dartmouth St.
1878 Viles, Clarence Albertus...Lowell. 855 Bridge St.
1904 Vincent, Beth.............Boston. 295 Beacon St.
1910 Vosburgh, Stephen Earle...Augusta, Me. Maine Insane Hosp.
1897 Vose, Robert Henry.........Boston. 443 Beacon St.
1896 Voss, John William........Beverly. 366 Cabot St.
1905 Vrooman, Earle Morey.....North Adams. 93 Park Av.

W

1902 Wadsworth, Richard Goodwin Boston. 522 Commonwealth Av.
1914 Wagner, Emma Juliet......West Somerville (Somerville). 370 Highland Av.
1914 Wainshel, Percy William...Lynn. 125 Summer St.
1886 Wakefield, Albert Tolman..Sheffield.
1906 Walch, Joseph Francis.....Lawrence. 131 Haverhill St.
1904 Walcott, Henry Joel.......Concord. 92 Union St.
1863 Walcott, Henry Pickering..Cambridge. 11 Waterhouse St.
1906 Walcott, William Wright..Natick. 32 W. Central St.
1866 Walker, Augustus Chapman †1901 Cambridge. 5 Acacia St.
1913 Walker, Clifford Black.....Boston. 233 Charles St.
1902 Walker, David Harold.....Boston. 390 Commonwealth Av.
1908 Walker, Harry Abram.....Somerville. 472 Broadway.
1910 Walker, Irving James......Boston. 527 Beacon St.
1914 Walker, Isaac Chandler....Boston. 697 Huntington Av.
1894 Walker, William...........Revere. 780 Winthrop Av.
1905 Walker, William Dacre....Andover. 121 Main St.
1876 Wallace, Alonzo Stewart...Nashua, N.H. 198 Main St.
1905 Wallace, Anna Marie......Waverley (Belmont). Lock Box C.
1898 Wallace, George Loney.....Wrentham.
1910 Wallace, Harold Lowe.....Allston (Boston). 264 Brighton Av.
1899 Walsh, Charles Joseph.....Cambridge. 2094 Mass. Av.
1913 Walsh, Edmund Francis...Boston. 121 Pinckney St.
1904 Walsh, John Edward......Revere. 238 Beach St.
1880 Walton, George Lincoln...Boston. 199 Marlboro' St.
1897 Walton, William Joseph...Dorchester (Boston). 106 Bowdoin St.
1904 Ward, Edward Silvanus....North Attleborough. 84 North Washington St.
1886 Ward, George Otis........Worcester. 875 Main St.
1904 Ward, Roy Joslyn..........Worcester. 397 Pleasant St.
1913 Ward, William Greenleaf..Lynn. 150 Essex St.
1907 Wardle, Henry............Fall River. 863 Plymouth Av.
1907 Wardwell, James Knight..Roxbury (Boston). 2783 Washington St.
1908 Warner, Carmillus Turten.Marlborough. 75 West Main St.
1901 Warren, Alva Harding....Everett. 634 Broadway.
1905 Warren, Edward Dane.....Holyoke. 283 Maple St.
1905 Warren, Franklin Lafayette Bridgewater. Central Sq.
1908 Warren, Hobart Endicott..Ashburnham. Main St.
1909 Warren, John............Boston. 58 Beacon St.
1866 Warren, John Collins......Boston. 58 Beacon St.
1907 Warren, Lizzie Maude.....Baldwinsville (Templeton). Cottage Hospitals.
1860 Warren, Orin †1899 West Newbury (Newbury).
1909 Warren, Thomas Francis..Fall River. 591 Middle St.
1892 Washburn, Elliott.........Rutland. State Sanatorium.
1899 Washburn, Frank Hall....Holden.
1897 Washburn, Frederic Augustus Boston. Mass. Gen. Hospital.
1886 Washburn, George Hamlin.Boston. 377 Marlboro' St.
1901 Waterman, George Arthur.Boston. 410 Beacon St.
1895 Watkins, Royal Phillips...Worcester. 17 West St.
1878 Watson, Francis Sedgwick.Boston. 92 Marlboro' St.
1899 Watson, Frank Gilman....Dorchester (Boston). 11 Virginia St.

1908	Watson, John William	Boston. 613 Beacon St.
1911	Watters, Henry	Newton Center (Newton). 661 Commonwealth Av.
1907	Watters, William Henry	West Roxbury (Boston). Office, Boston. 419 Boylston St.
1894	Watts, Henry Fowler Ransford	Dorchester (Boston). 6 Monadnock St.
1907	Watts, Joseph Palmer	Wakefield. 223 Nahant St.
1908	Weaver, Harry Vernon	New Bedford. 161 William St.
1908	Webb, Harold Randall	Arlington. 22 Pleasant St.
1885	Webber, Amos Paterson	New Bedford. 250 Union St.
1880	Webber, Frederick Ward	Newton. 465 Center St.
1865	Webber, Samuel Gilbert †1911	Brookline. 60 Gorham Av.
1888	Webster, George Arthur	Boston. 419 Boylston St.
1859	Webster, Joseph Rowe †1908	North Lexington (Lexington). 87 Hancock St.
1890	Weeks, Joshua Franklyn	New Bedford. County Rd.
1894	Weiser, Walter Rupert	Springfield. 97 Chestnut St.
1894	Welch, Edward John	Lowell. 10 East Merrimack St.
1913	Weller, John Henry	State Farm (Bridgewater).
1846	Wellington, James Lloyd †1883	Swansea.
1900	Wells, Abner Toothaker	Canton, Ohio. 315 Cherry Av., W. E.
1912	Wells, Charles Edward	Boston. 233 Charles St.
1907	Wells, David Washburn	West Newton (Newton). Office, Boston. Hotel Westminster, Copley Sq.
1878	Wells, Frank	Boston. 120 Franklin St.
1906	Wells, Orion Vassar	Westford.
1891	Wentworth, Arthur Howard	Boston. 352 Marlboro' St.
1909	Wentworth, Mark Hunking	Boston. 86 Bay State Rd.
1904	Wernick, Benzion G.	Roxbury (Boston). Office, Boston. 259 Hanover St.
1874	Wescott, William Henry †1913	Roxbury (Boston). 66 Clifton St.
1880	West, Edward Graeff	Roxbury (Boston). 630 Warren St.
1910	West, Frederick Orra	Woburn. 55½ Pleasant St.
1894	West, George Leon	Newton Center (Newton). 860 Beacon St.
1894	Weston, George Dake	Springfield. 70 Main St.
1912	Wetherbee, Lucy Emma	Worcester. 2 King St.
1882	Wetherbee, Roswell	Cambridge. 798 Mass. Av.
1898	Wetherell, Arthur Bryant	Holyoke. 180 Chestnut St.
1884	Wheatley, Frank George	North Abington (Abington). 174 Adams St.
1893	Wheeler, Alfred Augustus	Leominster. 48 Mt. Pleasant Av.
1894	Wheeler, Charles Douglas	Worcester. 18 Chestnut St.
1908	Wheeler, Charles Holmes	Haydenville (Williamsburg).
1897	Wheeler, Emma Hammond	New Bedford. 57 Morgan St.
1870	Wheeler, Leonard	Worcester. 12 Chestnut St.
1900	Wheeler, Lucia Anna	Wernersville, Pa. State Asylum.
1906	Whelan, Charles	Hingham. Central St.
1910	Whelan, Edmond Vincent	Bridgewater. 35 School St.
1894	Whipple, Farrington Hasham	Boston. 1079 Boylston St.
1885	Whitaker, Clarence Wilder	Worcester. 44 Pleasant St.
1905	Whitcher, Burr Royce	West Somerville (Somerville). 1040 Broadway.
1884	Whitcombe, Charles Reed	Roslindale (Boston). 758 South St.
1910	White, Arthur Joseph	Dorchester (Boston). 5 Houghton St.
1894	White, Belle Platt	Springfield. 182 Sumner Av.
1893	White, Charles James	Boston. 259 Marlboro' St.
1902	White, Clifford Allen	Granville. P. O. Box 150.
1872	White, Emory Lincoln †1915	Somerville. 124 Highland Av.
1914	White, Everett	Lynn. 17 Marianna St.
1896	White, Franklin Warren	Boston. 322 Marlboro' St.
1914	White, George Arthur	Cambridge. 170 Harvard St.
1912	White, Henry Alverado	Taunton. 139 Bay St.
1882	White, Herbert Warren	Roxbury (Boston). 151 Humboldt Av.
1856	White, James Clarke †1911	Boston. 259 Marlboro' St.
1910	White, John Robert	Lynn. 166 Washington St.
1893	White, Leon Edward	Wellesley. Office, Boston. 397 Marlboro' St.
1872	White, Levi	Worcester. 7 Gates St.
1909	White, Lucy Nye	Winthrop. 818 Winthrop Av.
1899	White, Michael William	Somerville. 42 Bow St.
1911	White, Paul Dudley	Boston. Mass. Gen. Hosp.
1913	White, Robert Marshall	Dorchester (Boston). 276 Bowdoin St.
1892	White, William Allen	Roxbury (Boston). 249 Warren St.
1894	Whitehill, George Edward	Everett. 516 Broadway.
1897	Whiteside, George Shattuck	Portland. Ore. 710 Dekum Bldg.
1892	Whiting, George Washington Whitney	Somerville. 282 Broadway.
1886	Whitney, Charles Melville	Boston. 386 Commonwealth Av.
1882	Whitney, Edward Melville	New Bedford. 27 South 6th St.
1905	Whitney, Edward William	Indian Orchard (Springfield). 162½ Main St.
1910	Whitney, George Burgess	Haverhill. 252 Washington St.
1901	Whitney, Harriet Wiley	Indian Orchard (Springfield). 162½ Main St.
1905	Whitney, Ray Lester	Waverley (Belmont). McLean Hospital.
1874	Whitney, William Fiske	Boston. 228 Marlboro' St.
1904	Whiton, Ross Kittredge	Bedford.
1910	Whittemore, William Stewart	Cambridge. 39 Brattle St.
1906	Whittemore, Wyman	Boston. 330 Dartmouth St.
1891	Whitten, George Edwin	Haverhill. 154 Main St.
1887	Whittier, Francis Fremont	Brookline. 94 Harvard St.
1900	Whoriskey, John Joseph	Cambridge. 1712 Mass. Av.
1914	Wickham, Thomas William	South Boston (Boston). Carney Hospital.
1874	Wight, Daniel Webster †1902	West Medford (Medford). 86 Boston Av.
1891	Wilbur, Hubert Granville	Fall River. 292 North Main St.
1887	Wilbur, Sarah Mann	Springfield. 319 State St.
1910	Wilcox, De Witt Gilbert	Brookline. Office, Boston. 419 Boylston St.
1907	Wilcox, Henry Hopson	Springfield. 151 North Main St.
1892	Wilder, Raymond Sargent	Briarcliff Manor, N. Y.
1906	Wilder, Winford Oliver	Pittsfield. 34 Fenn St.
1906	Wilinsky, Charles Francis	Boston. 80 Green St.
1914	Wilkins, George Amory	Revere. 646 Beach St.
1900	Wilkins, George Clarence	Manchester, N. H. 795 Elm St.
1909	Wilkins, Samuel Henry	West Medford (Medford). 36 Harvard Av.
1898	Williams, Abram Case	Springfield. 137½ State St.
1894	Williams, Augusta Gilbert	Brookline. 278 Walnut St.
1887	Williams, Charles Crosby	Pasadena, Cal. 943 Los Robles Av.
1874 1895	Williams, Charles Herbert	Milton. Office, Boston. 1069 Boylston St.
1902	Williams, Edward Denison	Easthampton. 153 Union St.
1894	Williams, Edward Russell	Cambridge. Office, Boston. 1069 Boylston St.
1872	Williams, Edward Tufts †1910	Roxbury (Boston). 125 Dudley St.
1877	Williams, Francis Henry	Boston. 505 Beacon St.
1894	Williams, Frank Percival	Brookline. Office, Boston. 419 Boylston St.
1880	Williams, Harold	Boston. 528 Beacon St.
1897	Williams, Harry Edwin	Mount Vernon, Me.
1887	Williams, Henry Clarence	Boston. 74 Boylston St.
1899	Williams, Hugh	Boston. 301 Beacon St.
1906	Williams, John Thomas	Boston. 483 Beacon St.
1882	Williams, Joseph	Dorchester (Boston). 12 Bloomfield St.

1898	Willis, Charles Austin	Waltham. 562 Main St.
1870	Willis, Reuben †1908	Somerville. 285 Broadway.
1914	Willoughby, Earle Carlisle	Tewksbury. State Infirm'y.
1894	Wilson, Charles Oscar	Lowell. 614 Gorham St.
1913	Wilson, Charles Moore	Salem. 54 Washington St.
1910	Wilson, Edmund Winfred	Boston. City Hospital.
1904	Winchester, George Wesley	Mattapan (Boston). 1411 Blue Hill Av.
1888	Winn, Charles Henry	Roxbury. 1474 Tremont St.
1908	Winslow, Benjamin Sabert	New Bedford. 1065 South Water St.
1893	Winslow, Edward Smith	Easthampton. 103 Main St.
1903	Winslow, Frederick Bradlee	Boston. 275 Clarendon St.
1911	Wiseman, John Ignatius	Dorchester (Boston). State Hospital. Austin St.
1897	Withee, Frederick Elmarien	Newton Highlands (Newton). 9 Forest St.
1892	Withington, Alfreda Bosworth	Pittsfield. 17 Clinton Av.
1880	Withington, Charles Francis	Boston. 35 Bay State Rd.
1904	Wolbach, Simeon Burt	Boston. 420 Beacon St.
1885	Wolcott, Grace	Boston. 292 Marlboro' St.
1907	Wood, Benjamin Ezra	Allston (Boston). Office, Boston. 520 Beacon St.
1882 1888	Wood, Henry Austin	Waltham. 742 Main St.
1903	Wood, Henry Walton	New Bedford. 446 County St.
1885	Wood, Leonard	U. S. Army.
1899	Wood, Mary Anna	Pittsfield. 147 Pomeroy Av.
1901	Wood, Nathaniel Knight	Boston. 259 Beacon St.
1911	Wood, Nelson Merwin	Charlestown (Boston). 72 High St.
1889	Wood, Norman Perkins	Northfield. Main St.
1899	Woodbury, Frank Taylor	Wakefield. 23 Chestnut St.
1899	Woodbury, Herbert Elwell	Indianapolis, Ind. 1512 North Delaware St.
1873	Woodbury, Louis Augustus	Groveland. 23 Elm Park.
1891	Woodbury, William Richardson	Boston. 216 Newbury St.
1907	Woodill, Edith Esty	Waverley (Belmont). Lock Box C.
1902	Woodruff, Richard Allen	Pittsfield. 73 North St.
1899	Woods, Charles Edwin	Lunenburg. Lancaster Av.
1879 1897	Woods, George Lyman †1915	Springfield. 60 Sherman St.
1882	Woods, Jonathan Henry	Brookline. 167 Salisbury Road.
1893	Woodward, Johnson Rufus	Oxford.
1882	Woodward, Lemuel Fox	Worcester. 52 Pearl St.
1877	Woodward, Samuel Bayard	Worcester. 58 Pearl St.
1879	Woodworth, Dwight Stickney	Fitchburg. 417 Main St.
1902	Woodworth, John Dawson Roswell	Jamaica Plain (Boston). 9 Greenough Av.
1883	Worcester, Alfred	Waltham. 751 Main St.
1873	Workman, William Hunter †1912	Worcester.
1901	Wormelle, Charles Burton	Allston (Boston). 75 Gardner St.
1902	Worth, Edward Philip	Edgartown.
1904	Worthen, Charles Arthur	Lynn. 32 Mall St.
1914	Worthen, Clarence Fred	Weston. Central Av.
1896	Worthington, Arthur Morton	Dedham. 26 Court St.
1897	Wright, George Hermann	New Milford Cbk. 24 Monument Sq.
1894	Wright, James Homer	Boston. Mass. Gen. Hospital.
1910	Wright, William Francis	Fall River. 160 Robeson St.
1895	Wylie, Eugene Cushman	Dorchester (Boston). 556 Washington St.
1894	Wylie-Cushman, Ella Rosalind	Boston. 711 Boylston St.
1912	Wyman, Edwin Theodore	Boston. 483 Beacon St.

Y

1903	Yeaton, George William	Medway. Village St.
1897	Yenetchi, Henry Ainsworth	Somerville. 104 Highland Av.
1895	Yoosuf, Abraham Kevork	Worcester. 23 Chandler St.
1895	Young, Edgar William	Everett. 640 Broadway.
1910	Young, Edward Lorraine, Jr.	Boston. 87 Marlboro' St.
1914	Young, Edward Wallace	New Bedford. 403 Union St.
1897	Young, Ernest Boyen	Boston. 434 Marlboro' St.
1906	Young, Evangeline Wilson	Boston. 168 Newbury St.
1907	Young, James Herbert	Newton. 430 Center St.
1882	Young, John Francis	Brookline. 1821 Beacon St.
1905	Young, Ralph Randal	Roxbury (Boston). 5 Highland St.
1905	Young, Roy Demas	Arlington. 788 Mass. Av.
1908	Young, Walter Harding	Dedham. Office, Boston. 39 Newbury St.
1899	Young-Slaughter, Emma Elizabeth	Lowell. 100 Westford St.

Z

1888	Zabriskie, Frank Hunter	Greenfield. 426 Main St.
1913	Zimmerman, Henry	Springfield. 721 North St.

Massachusetts Medical Society

LOCAL DIRECTORY

THE FELLOWS LISTED ACCORDING TO THEIR SITUATION
IN THE VARIOUS CITIES, TOWNS AND POST
OFFICES OF THE STATE

JANUARY 1, 1915

LOCAL DIRECTORY

THE FELLOWS LISTED ACCORDING TO THEIR SITUATION IN THE VARIOUS CITIES, TOWNS AND POST OFFICES OF THE COMMONWEALTH.

Note.—Names of District Societies are printed in lower-case Roman. Names of cities are printed in capitals. Names of towns are printed in small capitals. Names of villages and post offices are printed in lower-case Italics.

Abington (Plymouth).
(See also: North Abington.)
Hutchinson, W. P.

Acton (Middlesex North).
(See also: West Acton).

Acushnet (Bristol North).

Adams (Berkshire).
Boom, A. K.
Crowley, J. F.
Holmes, H. B.
Pascoe, W. W.

Agawam (Hampden).
(See also: Feeding Hills.)

Alford (Berkshire).

Allerton (Hull).
Sturgis, W. H. W.

Allston (*Brighton*) (BOSTON).
Casey, J. F.
Dadmun, E. J.
Dow, E. S.
Giddings, H. G.
Haslam, F. A.
Kimpton, A. R.
Lovell, M. E.
McKeen, S. F.
O'Brien, C. R.
Riley, C. A.
Rogers, M. H.
Tilton, E. E.
Turnbull, J. A.
Wallace, H. L.
Wood, B. E.
Wormelle, C. B.

Amesbury (Essex North).
Adams, J. Q.
†Douglass, J. A.
Leslie, H. G.
Mudge, O. P.
Mullen, P. J.
Murphy, D. D.
Rand, J. W.
Robinson, H. P.
Roche, T. N.
Savignac, A. N.

Amherst (Hampshire).
(See also: Cushman, North Amherst.)
Barrows, Sterling.
Bowen, J. F.
Haskell, N. C.
Rawson, G. W.
Rockwell, H. G.

Annisquam (Gloucester).
Shields, E. E.

Andover (Essex North).
Abbot, C. E.
Clark, J. D.
Conroy, E. C.
Fuller, J. R.
Torrey, J. P.
Walker, W. D.

Arlington (Middlesex South).
(See also: Arlington Heights.)
Atwood, C. F.
Buckley, D. J.
Dennett, C. A.
Hanson, W. T.
Keegan, C. A.
Lawley, B. I.
Pratt, Ezekiel.
Sanger, G. E.
Stickney, E. P.
Tolman, Julia
Webb, H. R.
Young, R. D.

Arlington Heights (Arlington).
Farrington, L. M.
Knowlton, W. M.
Ring, A. H.

Ashburnham (Worcester North).
Fosgate, E. G.
Warren, H. E.

Ashby (Worcester North).
Pope, F. F.

Ashfield (Franklin).
Urquhart, J. E.

Ashland (Middlesex South).
Morse, R. S.

Athol (Worcester North).
Cuddy, J. F.
Holmes, L. D.
Perry, G. L.

Atlantic (QUINCY).
Bartlett, F. A.
Bruce, D. A.
Drew, M. E.

Attleborough (Bristol North).
Battershall, J. W.
Battershall, M. H. W.
Clarke, J. W.
Conro, A. C.
Hewitt, W. O.
Holden, C. S.
Kent, R. P.
Mackie, L. V. G.
Milot, W. F.
Murphy, F. V.
Reese, J. A.
Rounseville, W. E.

Auburn (Worcester).

Auburndale (NEWTON).
Godfrey, F. W.
Haskell, H. H.
Hutchinson, C. P.
Keever, H. F.
Porter, F. E.

Avon (Plymouth).
Elliott, R. A.
Linfield, E. P.

Ayer (Worcester North).
Bulkeley, F. S.
Hopkins, B. H.
Priest, H. B.

Baldwinsville (Templeton).
Libby, M. A.
Page, H. W.
Roble, W. F.
Warren, L. M.

Barnstable (Barnstable).
(See also: Cotuit, Hyannis, Marston's Mills, Osterville.)
Millikin, C. W.

Barre (Worcester).
Bates, W. S.
Brown, G. A.

Becket (Berkshire).
Dearborn, H. H.

Bedford (Middlesex North).
Hamblen, E. E.
Whiton, R. K.

Belchertown (Hampshire).
Eliot, H. W.

Bellingham (Norfolk).

Belmont (Middlesex South).
(See also: Waverley.)
Dow, J. A.
†Underwood, G. L.

Berlin (Worcester).

Bernardston (Franklin).
Croft, B. P.
Pierce, W. H.

BEVERLY (Essex South).
Cowles, F. A.
Dexter, Franklin
Haddock, C. W.
Hayes, W. F.
Hill, G. J.
Johnson, P. P.
Sears, H. E.
Shatswell, J. A.
Shea, J. J.
Stanley, F. G.
Stickney, G. A.
Stone, R. E.
Swan, L. C.
†Swasey, O. F.
†Torrey, S. W.
Voss, J. W.

BILLERICA (Middlesex North).
Buck, M. A.
Stearns, A. W.

Blackinton (**WILLIAMSTOWN**).
Galvin, William

BLACKSTONE (Worcester).
Roche, T. F.

BLANDFORD (Hampden).

BOLTON (Worcester).

Bondsville (**PALMER**).
Smith, W. B. T.

BOSTON (Suffolk).
(See also: East Boston, South Boston, Allston, Brighton, Charlestown, Dorchester, Forest Hills, Hyde Park, Jamaica Plain, Mattapan, Roslindale, Roxbury, West Roxbury.)
Achorn, R. C.
Adams, J. D.
Allard, C. E.
Allen, Freeman
Allen, G. E.
Allen, G. W.
Amadon, A. F.
Amadon, A. M.
Ames, J. L.
Andrews, A. J.
Andrews, H. V.
Appleton, William
Arkin, Louis
Arnold, H. D.
Austin, A. E.
Ayer, J. B.
Ayer, S. H.
Badger, G. S. C.
Bailey, W. C.
Baker, D. V.
Baker, H. W.
Balboni, G. M.
Balch, F. G.
Baldwin, H. C.
Barney, J. D.
Barney, W. O.
Barone, Joseph
Barrell, C. S.
Barrier, E. A.
Barstow, A. T.
Bartol, J. W.
Bean, C. P.
Beebe, T. C.
Berry, C. F.
Bigelow, W. S.
Binney, Horace
Bisbee, E. S.
Blake, C. J.
Blake, Gerald
Blake, J. B.
Blake, J. G.
†Blodgett, A. N.
Blodgett, J. H.
†Boardman, W. E.
Boardman, W. P.
Boardman, W. S.
Bonelli, R. P.
Boothby, W. M.
Bossidy, J. C.
Bottomley, J. T
Boutwell, H. K.
Bowditch, H. I.
Bowditch, V. Y.
Bowen, J. T.
Bowman, F. R.
Brackett, E. G.
Bradford, E. H.

BOSTON (continued).
Brady, J. F.
Brant, Austin
Bremer, J. L.
Brewster, G. W. W.
Briggs, F. M.
Briggs, L. V.
Brigham, F. G.
Brindisi, Rocco
Broderick, T. F.
Brooks, W. A.
Brough, D. D.
†Brown, F. H.
Brown, L. T.
Brown, Percy
Brown, W. J.
Browne, W. E.
Bryant, A. G.
Buck, H. M.
Buckingham, E. M.
Bullard, W. N.
Burlingham, L. H.
Burnett, F. L.
Burnham, E. A.
Burns, F. S.
Burrage, W. L.
Burt, F. L.
Butler, C. S.
Cabot, Hugh
Cabot, R. C.
Call, E. L.
Carley, M. E.
Castleman, Philip
Chadbourne, A. P.
Chamberlain, M. L.
Chandler, T. E.
Chase, H. M.
Chase, Horace
Chase, W. G.
Cheever, David
†Cheever, D. W.
Chenery, W. E.
Christian, H. A.
Chute, A. L.
Clap, E. W.
Clark, G. O.
Clark, J. P.
Clark-MacLeod, Emily
Cliff, L. A.
Clymer, George
Cobb, Farrar
Cobb, F. C.
Cobb, G. N.
Cochrane, R. C.
Codman, E. A.
Coffin, R. A.
Cogan, J. A.
Colburn, H. H.
Conant, W. M.
Coriat, I. H.
Coté, H. J.
Cotton, F. J.
Coues, W. P.
Councilman, W. T.
Coursey, F. R.
Courtney, J. W.
Cowles, W. L.
Cox, A. C.
Cox, O. F.
Crabtree, E. G.
Cragin, G. A.
Crandon, L. R. G.
Crane, Clarence
Crawford, F. X.
Crockett, E. A.
Crosbie, A. H.
Culbertson, E. V. P. B.
Cummin, J. W.
Cummins, L. J.
Cunningham, A. R.
Cunningham, J. H., Jr.

BOSTON (continued).
Cushing, H. W.
Cutler, E. G.
Cutler, G. D.
Daly, W. J.
Daniels, E. A.
Davenport, F. H.
Davis, F. A.
Davis, Lincoln
Davis, M. F.
Dawson, R. P.
Day, H. F.
DeBlois, T. A.
Delano, Samuel
Denig, B. A.
Denning, E. J.
DeNormandie, R. L.
Derby, G. S.
Dewing, L. A.
Dixon, Arthur
Dixon, L. S.
Dixon, R. B.
Dodd, W. J.
Dodge, A. M.
Dodge, W. W.
Donlan, C. E.
Donoghue, F. D.
Dorcey, J. E.
Dowling, J. J.
Drury, D. W.
Duckering, F. W.
Dunn, C. H.
Dunn, Wm. Aloysius
Dunn, Wm. Ambrose
Dwight, E. W.
Eames, G. F.
Earle, G. H.
Easton, E. T.
Edwards, W. L.
Ehrenfried, Albert
Ehrlich, Henry
Elliot, J. W.
Elliott, R. D.
Emerson, N. W.
Emerson, W. R. P.
English, M. J.
Erb, T. C.
Eustis, R. S.
Evans, Albert
Everett, E. E.
Fabyan, Marshal
Fair, R. P.
Farlow, J. W.
Faulkner, W. E.
Felch, C. I.
Felch, G. A.
Felch, L. P.
†Fernald, C. A.
Finkelstein, Harry
Fischbein, Louis
Fitz, G. W.
Fitz, Reginald
Fitzgerald, J. B.
Flagg, Elisha
Floyd, Cleaveland
Foley, T. B.
Fraser, A. McK.
Friedman, Benjamin
Friedman, Nathan
Frothingham, Channing, Jr.
Frye, E. B.
Gallison, J. M.
Galloupe, C. W.
Gannett, W. W.
Garland, G. M.
Gay, H. S.
Gay, W. F.
Germain, H. H.
Ghoreyeb, A. A. W.
Gilpatrick, R. H.
Goddu, L. A. O.

BOSTON (continued).
Golden, Lazarus
Goldthwait, J. E.
†Goldthwait, S. V.
Goodale, J. L.
Goodeall, H. W.
Grainger, E. J.
Granger, F. B.
Grant, W. H.
Graves, W. P.
Greeley, H. P.
Green, C. M.
†Green, J. O.
Green, R. M.
†Green, S. A.
Greene, D. C., Jr.
Greene, E. M.
Greenough, R. B.
Haines, Ignatius
Haley, W. T.
Hall, G. W.
Hall, W. D.
Hamilton, A. J. A.
Hamilton, A. L.
Hanscom, R. F.
Harding, G. F.
Hare, C. H.
Harmer, T. W.
Harrington, T. F.
Harrison, C. W.
Harrison, Henry
Hartung, H. H.
Hartwell, H. F.
Hartwell, J. B.
Haskins, F. E.
Hawes, J. B., 2nd
Hawkins, Henry
Hebbard, E. C.
Heffernan, D. A.
Henderson, F. F.
Hepburn, J. J.
†Hersey, F. C.
Hewes, H. F.
Heydemann, Martin
Higgins, F. A.
Hill, G. S.
Hill, L. W.
Hill, T. C.
Hipkiss, George
Hitchcock, Edward
Hogner, R. P. F.
Holmes, E. M.
Holt, F. H.
Houghton, N. H.
Howard, A. A.
Howard, A. G.
Howe, O. T.
Howe, W. C.
Howland, J. B.
Hubbard, J. C.
Hughes, L. A. C.
Hunt, D. L.
Huntington, J. L.
Hurley, J. J.
Hurwitz, A. J.
Hutchins, H. T.
Irving, F. C.
Jack, E. E.
Jack, F. L.
Jackson, D. L.
Jackson, Henry
Jackson, J. M.
Janes, A. P.
Jantzen, F. T.
†Jeffries, B. J.
Jelly, A. C.
Johnson, F. M.
Johnson, F. W.
Jones, D. F.
Jones, M. S.
Jordan, E. M.

BOSTON (continued).
Joslin, E. P.
Katsainos, G. M.
Keenan, G. F.
Kellogg, E. B.
Kellogg, F. L.
Kellogg, F. S.
Kennedy, A. G.
Kepler, C. O.
Kerr, I. D.
Kilburn, H. W.
King, F. A.
Kissock, R. J.
Klein, Isaac
Knapp, P. C.
Ladd, Maynard
Ladd, W. E.
Lahey, F. H.
Larrabee, R. C.
Lawrence, N. L.
†Lawrence, R. M.
Leavitt, P. H.
Lee, H. J.
Leen, T. F.
Legg, A. T.
Leland, G. A.
Leland, G. A., Jr.
L'Esperance, O. R. T.
Levins, N. N.
Lewis, F. E.
Liebman, William
Lindquist, C. A.
†Lithgow, R. A. D.
Little, J. M., Jr.
Lloyd, H. D.
Locke, E. A.
Loder, H. B.
Lord, F. T.
Lothrop, H. A.
Lothrop, O. A.
Lovett, R. W.
Lowell, F. L.
Luce, LeR. A.
Luftig, Jacob
Lund, F. B.
Lyman, Henry
MacAusland, A. R.
MacAusland, W. R.
McClintock, F. B.
McCollom, J. H.
McCurdy, T. E. A.
McDonald, S. J.
McGann, P. P.
MacKnight, W. F.
McLaughlin, H. J.
MacLennan, A. D.
McWeeny, B. M.
Madden, W. D.
Magrath, G. B.
Mahoney, D. F.
Marble, H. C.
Marcy, H. O.
Marshall, H. W.
Martin, J. F.
Martin, Miles
Mason, N. R.
Mead, L. G.
Means, J. H.
Medalia, L. S.
Meek-Rabe, E. R.
Merrill, A. S.
Metcalf, Richard
Miller, G. F.
Miller, R. H.
Minot, G. R.
Minot, J. J.
Mixter, C. G.
Mixter, S. J.
Mixter, W. J.
Monks, G. H.
Moore, G. C.

BOSTON (continued).
Moore, J. H.
Morgan, C. R.
Morgan, John
Morong, A. B.
Morrison, A. B.
Morse, C. F.
Morse, G. W.
Morse, H. L.
Morse, J. L.
Mosher, H. P.
Murphy, F. C.
Murray, B. F.
Myers, S. W.
Nagle, E. W.
Newell, F. S.
†Nichols, A. H.
Nichols, E. H.
Nishan, H. M.
Nolen, W. F.
Noyes, M. L.
Nute, A. J.
O'Brien, E. J.
Oliver, E. L.
†Oliver, H. K.
O'Neil, R. F.
Osgood, R. B.
O'Sullivan, Anna
Otis, E. O.
Otis, W. J.
Ott, G. J.
Overlander, C. L.
Packard, A. E.
Packard, Horace
Page, A. K.
Page, C. G.
Paine, A. K.
Palfrey, F. W.
Palmer, Ezra
Palmer, S. E.
Palmer, W. W.
Parker, W. S.
Paul, L. G.
Paul, W. E.
Payne, J. H.
Pearl, S. M.
Pease, E. A.
Pemberton, F. A.
Penhallow, D. P.
Percy, K. G.
Perry, H. J.
Phelps, J. S.
Phipps, Cadis
Pierson, P. H.
Pike, W. C.
Piper, Frank
Place, E. H.
Pomeroy, H. S.
Pond, B. W.
Pope, E. F.
Porter, C. A.
Post, Abner
Powers, G. H.
Praino, Gaetano
Preble, W. E.
Prenn, Joseph
Prince, Morton
Putnam, J. J.
Quackenboss, Alexander
Quinby, W. C.
Reardon, T. J.
Reggio, A. W.
Reynolds, Edward
Rice, W. H.
Richards, G. G.
†Richards, G. E.
Richardson, A. G.
Richardson, E. P.
Richardson, F. L.
Richardson, Oscar
Richardson, W. L.

BOSTON (continued).
Riley, Augustus
Riley, E. A.
Risley, E. H.
Robbins, Chandler
Robbins, E. D.
Robbins, W. B.
Robey, W. H., Jr.
Rogers, A. E.
Rolfe, W. A.
Rosen, D. W.
Rothblatt, H. L.
†Rowe, G. H. M.
Rushmore, Stephen
Sabine, J. D. K.
Sadler, R. A.
Sargent, G. A.
Saunders, E. L.
Saville, S. C.
Sawyer, E. K.
Scannell, D. D.
Scudder, C. L.
Sears, G. G.
Sears, H. F.
Seymour, Malcolm
Shattuck, F. C.
Shattuck, G. B.
Shattuck, G. C.
Shaw, Albert J.
Shaw, Arthur J.
Shea, T. B.
Sheldon, R. F.
Simmons, C. C.
†Skinner, E. M.
Smith, Conrad
Smith, C. M.
Smith, E. W.
Smith, G. C.
Smith, G. G.
Smith, H. H.
Smith, M. A.
Smith, P. M.
Smith, R. M.
Smith, W. D.
Smith, W. H.
Sobotky, Irving
Soutter, Robert
Spooner, L. H.
Sprague, F. P.
Sprague, R. B.
Stacey, C. F.
Standish, Myles
Stedman, George
Stevens, W. S.
Stone, A. K.
Stone, C. S.
Stone, G. H.
Stone, J. S.
Storer, Malcolm
Streeter, C. E.
Strong, R. P.
Stuart, J. H.
Sullivan, C. B.
Sumner, P. S.
Supple, E. A.
Swain, H. T.
Swift, E. H.
Swift, J. B.
Swift, W. B.
Talbot, F. B.
Taylor, E. W.
Temple, W. F.
Temple, W. F., Jr.
Ten Broeck, Carl
Tenney, Benjamin
Thomas, J. J.
Thompson, C. O.
Thompson, P. H.
Thorndike, Augustus
Thorndike, Paul
Thorndike, T. W.

BOSTON (continued).
Thornton, J. B.
Tingley, L. P.
Titus, R. S.
Tobey, G. L., Jr.
Torbert, J. R.
Towle, H. P.
Townsend, C. W.
Trayes, W. H., Jr.
†Trull, W. B.
Twombley, E. L.
Tyrode, M. P. O. V.
Verhoeff, F. H.
Vickery, H. F.
Vietor, A. C.
Vincent, Beth
Vose, R. H.
Wadsworth, R. G.
Walker, C. B.
Walker, D. H.
Walker, I. J.
Walsh, E. F.
Walton, G. L.
Warren, John
Warren, J. Collins
Washburn, F. A.
Washburn, G. H.
Waterman, G. H.
Watson, F. S.
Watson, J. W.
Webster, G. A.
Wells, C. E.
Wells, Frank
Wentworth, A. H.
Wentworth, M. H.
Whipple, F. H.
White, C. J.
White, F. W.
†White, J. C.
Whitney, C. M.
Whitney, W. F.
Whittemore, Wyman
Wilinsky, C. F.
Williams, F. H.
Williams, Harold
Williams, H. C.
Williams, Hugh
Williams, J. T.
Wilson, E. W.
Winslow, F. B.
Withington, C. F.
Wolbach, S. B.
Wolcott, Grace
Wood, N. K.
Woodbury, W. R.
Wright, J. H.
Wylie-Cushman, E. R.
Wyman, E. T.
Young, E. L., Jr.
Young, E. B.
Young, E. W.

BOURNE (Barnstable).
(See also: Cataumet, Sagamore.)

BOXBOROUGH (Middlesex North).

BOXFORD (Essex North).

BOYLSTON (Worcester).
Balcom, K. I.

Bradford (HAVERHILL).
Anthony, F. W.
Atwood, G. M.
Brainerd, W. S.
George, L. H.
Littlefield, M. C.
O'Toole, J. L.

BRAINTREE (Norfolk South).
(See also: South Braintree.)
Cook, J. W.
Dearing, H. L.
Gile, F. H., Jr.
Gould, C. H.

BREWSTER (Barnstable).
Crocker, L. A.

BRIDGEWATER (Plymouth).
(See also: State Farm.)
Carr, A. W.
†Pratt, Calvin
Warren, F. L.
Whelan, E. V.

Brighton (Middlesex South.)
(BOSTON).
(See also: Allston.)
Buckley, W. S.
Crosby, W. H.
Gwinnell, A. W.
Rice, F. W.
Rowen, H. S.
Tinkham, O. G.

BRIMFIELD (Hampden.)
Sawin, R. V.

BROCKTON (Plymouth).
(See also: Campello.)
Alfred, James
Bacon, J. E.
Barrett, M. F.
Beals, A. L.
Boucher, G. H.
Brady, J. E.
Brides, A. E.
Buckley, G. A.
Burnett, F. H.
Chase, H. A.
Clark, E. W.
Cloudman, H. R.
Condrick, J. J.
Dacy, C. J.
Drohan, J. H.
Ducy, W. D.
Fullerton, W. W.
Goddard, H. E.
Goddard, S. W.
Granstein, C. I.
Gruver, S. J.
Keith, W. C.
Lawrence, J. H.
Lupien, H. J.
McCann, C. D.
McCarthy, T. H.
McNamara, J. J.
Mara, J. L.
Miles, C. G.
Millet, C. S.
Moore, G. A.
Murdock, F. W.
Noyes, J. R.
O'Brien, F. W.
Packard, L. B.
Paine, A. E.
Pettey, J. A.
Ripley, F. J.
†Robinson, L. M.
Safford, W. P.
Shaw, J. P.
Simmons, F. A.
Smith, A. C.
Sullivan, A. J.
Tuholski, D. B.

BROOKFIELD (Worcester).
(See also: East Brookfield.)
Newhall, L. T.
Sherman, M. H.

BROOKLINE (Norfolk).

(See also: Waban.)
Adams, Z. B.
Ball, J. W.
Barnes, H. A.
Blakely, D. N.
Blanchard, B. S.
Boos, W. F.
Borden, C. R. C.
Bowditch, Harold
Bowker, E. M.
Brainerd, J. B.
Brigham, E. H.
Bufford, J. H.
Bulfinch, G. G.
Butler, P. F.
†Call, Norman
Casselberry, C. M.
Channing, Walter
Chase, H. L.
Cleaves, F. H.
Connelly, J. E.
Coolidge, Algernon
Cooper, Almon
Cornwall, A. P.
Cushing, A. A.
Cushing, Harvey
Cutts, H. M.
Dalton, C. H.
Dana, H. W.
Deal, E. E.
Denny, F. P.
Dewis, J. W.
Dreyfus, E. W.
Ellis, W. R.
Emerson, F. P.
Fairbanks, A. W.
Fallon, J. F.
Fay, W. E.
Francis, C. S.
Francis, G. H.
Gilbert, L. W.
Gilman, C. S.
Good, F. L.
Graham, Douglas
Gregg, Donald
Hastings, R. W.
Hatch, R. A.
Hayes, F. L.
Hills, W. B.
Hinckley, J. W.
Hixon, E. C.
Holmes, G. W.
Houghton, S. A.
Inglis, H. J.
Johnson, M. W. L.
Jones, Everett
Jones, F. E.
Jones, J. C.
Kaan, G. W.
Kennealy, J. H.
Kickham, C. J.
Kingman, R. A.
Kittredge, Joseph
Lawrence, C. H., Jr.
Levy, F. J.
Litchfield, W. H.
Lyle. E. B.
MacCormick, J. A.
Mackie, W. C.
McLaughlin, H. V.
McMahon, F. J.
Mallory, F. B.
Mann, W. O.
Metcalf, J. T.
Parker, H. S.
Pearce, A. C.
Phaneuf, L. E.
Powers, H. H.
Pratt, J. H.
†Purvis, C. B.

BROOKLINE (continued).

Rogers, E. A.
Rosenau, M. J.
Sabine, G. K.
Sanborn, G. P.
Shanahan, T. J.
Sibley, B. E.
Smyth, D. C.
Smyth, P. S.
Spalding, F. M.
Spear, L. M.
Stedman, H. R.
Taylor, J. G.
Toohey, T. V.
Torney, G. H.
†Webber, S. G.
Whittier, F. F.
Wilcox, De W. G.
Williams, A. G.
Williams, F. P.
Woods, J. H.
Young, J. F.

Bryantville (PEMBROKE).

Charles, O W.

BUCKLAND (Franklin).

BURLINGTON (Middlesex East).

CAMBRIDGE (Middlesex South).

(See also: East Cambridge.)
Adams, C. W.
Andrews, R. E.
August, Albert
Bacon, N. S.
Bailey, M. H.
Barnes, F. J.
Boyle, J. J.
Bresnihan, F. S.
Brousseau, W. G.
Brown, C. P.
Bryant, L. L.
Bucholz, C. H.
Buehler, G. V. B.
Burke, W. H., Jr.
Cady, F. B. M.
Cahill, C. S.
Cahill, T. J.
Cannon, W. B.
Clarke, Genevieve
Clarke, I. L.
Cleary, James
Cogswell, G. P.
Crocker, J. M.
Cronin, H. J.
Cunningham, J. H.
Cunningham, T. E.
Cunningham, T. E., Jr.
Currie, J. Z.
Darling, E. A.
Davis, B. D.
Dearborn, G. V. N.
Derby, W. P.
Donahue, W. F.
Dow, D. C.
Downing, A. F.
†Driver, S. W.
Dudley, A. W.
Dunham, A. F.
Dwyer, J. E.
Dwyer, J. E., Jr.
Dwyer, W. J.
†Ela, Walter
Ely, T. W.
Feeley, C. P.
Feeley, W. C.
Finnigan, P. J.
Fleet, W. E.
Fleming, P. J.
Foster, C. C.
Funnell, W. G.

CAMBRIDGE (continued).

Gardner, H. M.
George, A. W.
Goodridge, F. J.
Hanson, W. C.
Hapgood, L. S.
Hayes, W. L.
Heaton, T. H.
Hinton, W. A.
Honeij, J. A.
Hutchinson, C. M.
Jouett, F. R.
Kelleher, P. F.
Kennelly, J. G.
King, M. L.
LaMarche, W. J.
Lancaster, S. R.
Langnecker, H. L.
Leahy, T. J.
Lee, R. I.
Lockhart, J. S.
MacKillop, Daniel
Mackechnie, A. N.
McAdams, P. S.
McCarthy, E. A.
McGirr, F. F.
McIntire, G. F.
McIntire, H. B.
McKenzie, J. R.
Murphy, J. J.
Myles, L. T.
Nason, O. C. B.
Nelligan, J. P.
Nelson, C. A.
Noonan, W. A.
Norris, A. P.
Norton, G. E.
O'Rourke, E. J.
Page, G. T.
Palmer, G. M.
Partridge, T. J.
Peabody, F. W.
Peirce, B. H.
Potter, A. C.
Preble, Wallace
Putnam, W. A.
Robertson, J. W.
Rose, W. M.
Seavy, H. L.
Sennott, J. R.
Sever, J. W.
Shannon, N. V.
Smith, J. J.
Somers, J. E.
Southard, E. E.
Southard, M. A.
Stevens, E. H.
Stevens, H. P.
Sullivan, F. A.
Swan, W. D.
Taylor, F. W.
Thomas, C. H.
Thomas, W. K. S.
Trainor, J. A.
Tuttle, A. H.
Verde, Luigi
Walcott, H. P.
†Walker, A. C.
Walsh, C. J.
Wetherbee, Roswell
White, G. A.
Whittemore, W. S.
Whoriskey, J. J.
Williams, E. R.

Campello (BROOKTON).

Averill, J. H.
Caswell, W. E.
Frost, E. W.
Holmberg, C. L. M.
King, N. C.

Canton (Norfolk).
Fish, J. E.
Luce, D. S.
Tenney, W. N.

Carlisle (Middlesex North).

Carver (Plymouth).

Cataumet (Bourne).
Cowles, W. W.

Charlemont (Franklin).

Charlestown (Middlesex South). (BOSTON).
Breslin, J. G.
Brickley, W. J.
†Dearborn, J. G.
Duff, John
Fitzpatrick, J. J.
Flagg, H. H.
Grandison, W. G.
Hammond, W. P.
Hurley, D. J.
Lyons, J. B.
Magurn, F. T. L.
McDermott, J. E.
MacDonald, W. J.
McNally, W. J.
Morris, M. A.
O'Brien, J. F.
Patterson, W. F.
Plummer, E. M.
Silva, F. P.
Sprague, R. W.
Wood, N. M.

Charlton (Worcester).

Chatham (Barnstable).
†Gifford, B. D.

Chelmsford (Middlesex North)
(See also: North Chelmsford.)
Howard, Amasa
Scorboria, A. G.

CHELSEA (Suffolk).
†Chipman, W. R.
Cutler, C. N.
Fenwick, G. B.
Guild, E. F.
Kenney, J. E.
Putnam, J. M.
Raddin, F. S.

Cheshire (Berkshire).

Chester (Hampden).
Lanpher, H. A.

Chesterfield (Hampshire).
Hudnut, P. A.

Chestnut Hill (NEWTON).
Baldwin, H. T.
Briggs, E. C.
Curtis, F. G.
Gay, G. W.

CHICOPEE (Hampden).
(See also: Chicopee Falls, Willimansett.)
Gallagher, J. H. C.

Chicopee Falls (CHICOPEE).
Beauchamp, J. O.
Cooley, A. L.
†Gibbs, L. J.
Mannix, L. E.
Powers, J. T. H.
Shea, M. I.

Chilmark (Bristol South).

Clarksburg (Berkshire).

Cliftondale (Saugus).
Danforth, H. A.
Penny, H. T.
Penny, M. M.
Perkins, T. T.

Clinton (Worcester).
Abbott. C. R.
Bowers, W. P.
Chase, G. L.
French, C. L.
Goodwin, J. J.
Grady, P. A. S.
Kirby, J. R.
MacKay, E. H.
Monahan, J. A.
Morse, I. M.
Tobey, G. L.

Cochituate (Framingham).
Sparks, E. E.

Cohasset (Norfolk South).
Bryant, John
Hinchliffe, Frederick
Howe, O. H.
Osgood, George

Colrain (Franklin).
Cram, J. W.
Mather, J. A.

Concord (Middlesex South).
(See also: Concord Junction.)
Cheney, F. E.
Emerson, E. W.
Titcomb, G. E.
Walcott, H. J.

Concord Junction (Concord).
Fernald, G. G.
Pickard, I. L.

Conway (Franklin).

Cotuit (Barnstable).
Haskins, S. F.

Cummington (Hampshire).
†Stutson, W. P.
Swanson, A. F.

Cushman (Amherst).
Fuller, A. H.

Dalton (Berkshire).
MacKay, G. F.
Schofield, W. W.
Sullivan, P. J.

Dana (Worcester).
(See also: North Dana.)

Danvers (Essex South).
(See also: Hathorne.)
Baldwin, F. W.
Buck, C. L.
Deering, C. F.
Marsh, A. P.
Sparhawk, C. W.

Dartmouth (Bristol South).
(See also: South Dartmouth.)

Dedham (Norfolk).
(See also: East Dedham.)
Batchelder, H. G.
Finn, E. W.
Hodgdon, A. H.
Pratt, J. W.
Worthington, A. M.
Young. W. H.

Deerfield (Franklin).
(See also: South Deerfield.)
Davis, P. G.
Thorn, E. C.

Dennis (Barnstable).
(See also: Dennisport, East and West Dennis.)

Dennisport (Dennis).
Ginn, D. R.

Dighton (Bristol North).
Baker, H. B.

Dorchester (Norfolk). (BOSTON).
(See also: Mattapan.)
Abbe, F. R.
Adams, H. W.
Bailey, F. J.
Ballou, A. R.
Barker, W. W.
Batchelder, W. B.
Bliss, G. D.
Bogan, F. L.
Brayton, R. W.
Brearton, E. J.
Brown, F. B.
Butler, J. E.
Carroll, C. C.
Carruth, S. S.
Cavanaugh, C. R.
Coffin, A. B.
Costello, J. H.
Crittenden, S. W.
Croke, L. W.
Crossman, F. A.
Crowell, Samuel
Curran, S. F.
Davis, W. H.
Davison, A. H.
Devenny, J. H.
Dewey, C. G.
Dobson, W. M.
Draper, A. L.
Drummey, N. D.
Duckering, W. W.
Eldridge, D. G.
Emery, W. O.
Evans, M. H. A.
Fennessey, J. F.
Freedman, L. M.
Frost, H. P.
Giblin, F. J.
†Gilman, E. A.
Gookin, E. R.
Graves, B. A.
Hallisey, J. E.
Hammond, W. J.
Hardwick, E. V.
Harrington, D. J.
Harrington, H. L.
Hastings, J. M.
Hemeon, F. C.
Johnston, William
Kelley, J. H. H.
Kelly, J. M.
Kendricken, J. T.
Kent, Bradford
Kingsley, P. J.
Lane, J. W.
MacCallum, W. P.
Macauley, J. A.
Macdonald, A. A.
McEvoy, G. A.
McIntire, David
McQuade, L. S.
Mains, C. F.
Marr, M. L.
Marr, M. W.
Martin, H. W.

Dorchester (continued).
Mendelsohn, Louis
Merrick, R. M.
Miller, C. H.
Morrison, Hyman
Murray, P. J.
Myrick, H. G.
Mysel, Philip
Noble, M. G.
Norton, H. R.
Nute, Marion
O'Brien, J. J.
O'Hare, J. P.
Parker, W. H.
Parsons, F. S.
Parvey, Benjamin
Peirce, G. A.
Phillips, W. F.
Quest, J. F.
Reilly, J. A.
Reynolds, H. V.
Roberts, L. A.
Rogers, O. F.
Rogers, O. F., Jr.
Rood, L. C.
Scales, R. B.
Scanlan, M. T.
Scanlan, T. J.
Schmidt, R. D.
Shapira, V. I.
Sheppard, P. A. E.
Sherburne, A. E.
Sleeper, F. W.
Stack, J. J.
Starbird, E. P.
†Stevens, G. B.
Stone, H. E.
Sturnick, Max
Sullivan, J. J.
Sullivan, J. T.
Thurber, M. T.
Towle, H. C.
Treanor, J. P.
Twitchell, E. T.
Walton, W. J.
Watson, F. G.
Watts, H. F. R.
White, R. M.
Williams, Joseph
Wiseman, J. I.
Wylie, E. C.

Douglas (Worcester).
(See also: East Douglas.)

Dover (Norfolk).
Emmons, A. B., 2nd.
Porter, W. T.

Dracut (Middlesex North).
(See also: Dracut Center.)

Dracut Center (Dracut).
†Flint, O. A.

Dudley (Worcester).

Dunstable (Middlesex North).

Duxbury (Plymouth).
Durgin, S. H. (Millbrook P. O.)
Noyes, N. K.
Spalding, Roger

East Boston (BOSTON).
Bianco, J. A.
Bonney, Robert
Bowen, E. E.
Bragdon, H. E.
Campbell, B. F.
Ensworth, W. H.

East Boston (continued).
Grainger, W. H.
Halsall, M. E.
Hartnett, E. D.
Houghton, R. H.
Hurley, D. B.
Morrison, W. A.
Morrison, W. R.
Myers, Solomon
O'Keefe, M. W.
Parks, J. W.
Sisson, Mitchell
Tallman, A. L.
Tilton, F. H.

East Brookfield (Brookfield).
Hayward, W. F.

East Cambridge (CAMBRIDGE).
Clancy, W. H.
Fair, J. F.

East Dedham (Dedham).
Drew, F. P.

East Dennis (Dennis).
Hart, H. B.

East Douglas (Douglas).
†Holbrook, S. P.

East Gardner (Gardner).
Thompson, O. E.

East Gloucester (Gloucester).
†Eveleth, E. S.

Eastham (Barnstable).

Easthampton (Hampshire).
Burke, J. J.
Cobb, C. T.
Cobb, O. W.
Pond, L. B.
Williams, E. D.
Winslow, E. S.

East Longmeadow (Longmeadow).
Curtis, H. F.

East Milton (Milton).
Rowe, C. A.

Easton (Bristol North).
(See also: North Easton.)

East Taunton (Taunton).
Adams, W. C.

East Walpole (Walpole).
Coon, G. B.

East Weymouth (Weymouth).
Doucett, F. L.
Fraser, J. C.
Libby, J. H.

Edgartown (Bristol South).
Worth, E. P.

Egremont (Berkshire).

Enfield (Hampshire).
Segur, W. B.

Erving (Franklin).
Johnson, F. E.

Essex (Essex South).
Steeves, E. C.

EVERETT (Middlesex South).
Bruce, J. A.
Conroy, P. J.
Cornish, S. W.
Dickinson, G. W.
Downing, C. H.
Harrington, C. W.
Jackson, A. A.
Keaney, H. J.
McAllester, R. W.
McQuaid, T. B.
Morris, R. H.
Ordway, C. A.
Rogers, F. A.
Warren, A. H.
Whitehill, G. E.
Young, E. W.

Fairhaven (Bristol South).
Horne, L. W.
Howes, F. M.

FALL RIVER (Bristol South).
Abbe, A. J.
Almy, Thomas
Barré, J. A.
Blanchette, W. H.
Blood, G. W.
†Bowen, S. W.
Bright, J. C.
Buck, A. W.
Butler, G. E.
Butler, R. B.
Butler, W. H.
Chace, F. A.
Cone, D. E.
Connell, A. I.
Creamer, W. H.
Crispo, P. T.
Curry, E. F.
Dolan, W. A.
Fennelly, D. J.
French, R. W.
Gifford, J. H.
Gilbert, John
Gordon, S. M.
Hicks, G. H.
Howland, C. A.
Jackson, O. H.
Jackson, R. W.
Kelly, Michael
King, G. C.
Learned, W. T.
Lewis, A. C.
Lindsey, J. H.
Lowney, J. F.
MacKnight, A. S.
Macrae, A. C.
Marvell, M. W.
McCarthy, E. A.
McCreery, C. C.
Merritt, S. V.
Normand, J. N.
O'Brien, J. F.
Pritchard, W. P.
Ryder, D. R.
Sandler, Samuel
Simmons, R. H.
Stansfield, C. W.
Sullivan, L. J.
Swift, M. B.
Synan, W. E.
Tennis, M. N.
Trainor, J. B.
Truesdale, P. E.
Wardle, Henry
Warren, T. F.
Wilbur, H. G.
Wright, W. F.

Falmouth (Barnstable).
(See also: West Falmouth.)
Dwight, James
Jones, L. C.
Tripp, E. P.

Feeding Hills (Agawam).
Hastings, J. W.

Fisherville (Grafton).
Charbonneau, N. N.

Fiskdale (Sturbridge).
†Rice, A. B.

FITCHBURG (Worcester North).
Baker, L. F.
Barton, J. A.
Carey, B. W.
Chandler, C. L.
Cornforth, H. H.
Donovan, T. R.
Fish, Louis
Fiske, E. L.
Gay, C. B.
Jacques, Hector
Jennings, C. H.
Jones, R. C.
Kearney, J. H.
Killelea, E. V.
LaFortune. W. T.
Lane, C. R.
Lowell, A. P.
McMurray, F. M.
Mason, A. P.
Miller, E. P.
Morgner, R. A.
Mossman, George
Norton, G. P.
O'Malley, E. F.
Quessey, A. H.
Rice, C. H.
Rice, R. A.
Rodrick, A. F.
Sawyer, W. F.
†Sidney, A. W.
Stimson, J. W.
Sweeney, B. P.
Thompson, F. H.
Thompson, F. H., Jr.
Tully, E. J.
Woodworth, D. S.

Florence (NORTHAMPTON).
Taylor, Walter.

Florida (Berkshire).

Forest Hills (Norfolk) (BOSTON).
Prescott, W. H.

Foxborough (Norfolk).
Bragg, F. A.
Carlisle, F. H.
Crocker, B. P.
McPherson, G. E.
Moore, F. P.
Neff, I. H.

Framingham (Middlesex South).
(See also: Cochituate, Framingham Center, Saxonville.)
Baldwin, S. O.
Benner, H. O.
Bodwell, W. M.
Glass, James
Harriman, C. E.
Healy, D. L.
Hobbs, E. A.
Jessaman, L. W.
Morrow, W. R.

Framingham (continued).
Owen, A. S.
Palmer, L. M.
Potter, F. W.
Potter, J. C.
St. Clair, A. E.
Spaulding, E. R.

Framingham Center (Framingham).
Bigelow, E. H.

Franklin (Norfolk).
†Faxon, E. M.
Gallison, A. J.

Freetown (Bristol North).
Briggs, C. A.

Gardner (Worcester North).
(See also: East and West Gardner.)
Bailey, C. H.
Ellam, H. W.
†Greenleaf, J. R.
Kenworthy, M. E.
Lachance, A. P.
Lowell, A. F.
Lundwall, L. S. B.
Paine, H. L.
Poole, L. E.
Sawyer, E. A.
Underwood, G. B.

Gay Head (Bristol South).

Georgetown (Essex North).
Root, R. B.
Root, R. R.

Gill (Franklin).

GLOUCESTER (Essex South).
(See also: Annisquam and East Gloucester.)
Burnham, Parker
Carvell, Hanford
Choate, H. H.
Cook, S. P. F.
Egan, J. J.
Finegan, D. J.
†Garland, A. S.
Garland, Roy
Hallett, E. B.
Hubbard, E. D.
Knowles, J. H.
Logan, F. P. T.
Moore, P. P.
Mooring, S. W.
Morrow, C. H.
Proctor, P. C.
Rowley, William
Torrey, A. S.

Goshen (Hampshire).

Gosnold (Bristol, North).

Granby (Hampshire).

Grafton (Worcester).
(See also: Fisherville and North Grafton.)
Guild, F. W.

Granville (Hampden).
White, C. A.

Great Barrington (Berkshire.)
(See also: Housatonic.)
Chapin, C. S.
Kennedy, E. A.
Parks, S. H.
Stockwell, E. W.

Greenfield (Franklin).
Best, E. G.
Canedy, C. F.
Clark, W. K.
Croft, B. P.
Donahue, F. W.
Greenough, C. M.
Howe, H. N.
McConnell, D. J.
Millett, F. A.
Stetson, H. G.
Twitchell, G. P.
Zabriskie, F. H.

Greenwich (Hampshire).

Groton (Middlesex North).
Kilbourn, A. G.

Groveland (Essex North).
Woodbury, L. A.

Hadley (Hampshire).
Johnson, H. L.
Smith, F. H.

Halifax (Plymouth).

Hamilton (Essex South).
(See also: South Hamilton.)
Corcoran, J. G.

Hampden (Hampden).

Hancock (Berkshire).

Hanover (Plymouth).
Hammond, Charles
MacMillan A. L.

Hanson (Plymouth).

Hardwick (Worcester).

Harvard (Worcester).
Royal, H. B.

Harwich (Barnstable).
(See also: West Harwich.)
Handy, H. D.
Kline, G. M.
Miller, P. F.
Smyser, C. J.

Hathorne (Danvers).
Macdonald, J. B.

Hatfield (Hampshire).
†Barton, C. M.
Bonneville, A. J.
Byrne, C. A.

HAVERHILL (Essex North).
(See also: Bradford.)
Archambault, L. M.
Benson, C. S.
Bryant, J. E.
Capeles, T. F.
Carden, C. J.
†Chase, I. E.
Clarke, I. J.
Coffin, F. H.
Cogswell, William
Conner, H. L.
Connor, G. J.
Cooney, M. B.
Cotter, T. F.
Croston, J. F.
Donahue, Hugh
Dunn, C. S.

HAVERHILL (continued).
Durant, C. E.
Ferrin, W. W.
Fitzgerald, J. J.
George, A. P.
Holbrook, C. A.
Holden, W. D.
Hubbell, A. M.
Kaplovitch, Henry
Kelleher, J. E.
Laskey, E. P.
LeGro, L. B.
McFee, W. D.
McLaughlin, A. O
Mindlin, Carl
Mysel, H. A.
Nettle, Paul
Perkins, H. B.
Pierce, F. B.
Pitcher, H. F.
Popoff, Constantine
Robinson, W. P.
Ruel, J. A.
Sproull, John
Still, C. W.
Stokes, L. T.
Stone, T. N.
Sullivan, F. A.
Symonds, A. G.
Whitney, G. B.
Whitten, G. E.

Hawley (Franklin).

Haydenville (Williamsburg).
Perry, C. E.
Wheeler, C. H.

Heath (Franklin).

Hingham (Norfolk South).
Day, C. O.
Dorr, C. A.
Morse, A. G.
Peterson, J. A.
Whelan, Charles

Hinsdale (Berkshire).

Holbrook (Norfolk South).
Cole, A. J.
Crawford, F. W.
Kennison, F. M.

Holden (Worcester).
Holt, H. A.
Stickney, C. W.
Washburn, F. H.

Holland (Hampden).

Holliston (Middlesex South).
Dodd, J. E.
Heffernan, D. W.

HOLYOKE (Hampden).
Allen, C. A.
Allen, F. H.
Bagg, E. P., Jr.
Bigelow, J. B.
Bliss, J. L.
Bouvier, C. W.
Brady, W. F.
Carroll, J. J.
Cavanaugh, T. E.
Celce, F. F.
Celce, J. H.
Clark, G. H.
Clarke, L. H.
Cleary, R. E.
Cox, S. C.

HOLYOKE (continued).
Davis, E. M.
Dickson, R. E.
Donoghue, D. F.
Farr, I. H.
Forster, J. F.
Franz, Adolph
Gabler, G. L.
Hanifin, J. F.
Henderson, G. D.
Holyoke, Frank
Hubbard, J. C.
Hunt, A. E. P.
Hunt, G. E.
Hurley, P. E.
Hussey, E. J.
Irwin, G. G.
Kilburn, I. N.
Kinne, G. L.
Knowlton, E. A.
Lynch, H. E.
Mahoney, S. A.
McCabe, J. J.
Morrison, R. F.
Potts, J. H.
Rosenbloom, C. W.
Ryan, W. P.
Taylor, G. L.
Teahan, William
Warren, E. D.
Wetherell, A. B.

Hopedale (Worcester).

Hopkinton (Middlesex South).
Playse, L. F.

Housatonic (Great Barrington).
Jones, W. W.
Luchsinger, H. W.

Hubbardston (Worcester).
Knowlton, W. T.

Hudson (Middlesex South).
Breen, J. H.
Hunter, N. McL.

Hull (Norfolk South).
(See also: Allerton.)
Sylvester, C. P.

Huntington (Hampshire).
Crittenden, G. A.
†Gibbs, L. V.
Kimball, W. G.
Mace, C. H.

Hyannis (Barnstable).
Baker, C. M.
Binford, F. A.
Chase, H. B.
Harris, C. E.
Hawes, E. E.

Hyde Park (Norfolk) (BOSTON).
Barnum, F. G.
Baxter, E. H.
Bennett, W. H.
Bryant, C. E.
Carr, P. W.
Ellis, E. K.
O'Connor, J. H.
Slack, F. H.
Stack, C. F.

Indian Orchard (SPRINGFIELD).
Harrington, M. W.
Smith, S. F.
Whitney, E. U.
Whitney, H. M.

Ipswich (Essex South).
Bailey, G. G.
MacArthur, G. E.
McGinley, M. C.

Jamaica Plain (Norfolk) (BOSTON).
Berry, W. C.
Bigelow, A. H.
Bond, S. A.
Bridgman, B. N.
Broderick, F. P.
†Broidrick, J. P.
Broughton, A. N.
Broughton, H. W.
Brown, H. R.
Callahan, H. A.
Collier, L. H. G.
Dane, John
Ernst, H. C.
Faunce, C. B., Jr.
Fitz-Simmons, H. J.
Holland, H. T.
Howland, G. L.
Lane, E. B.
Leard, J. S. H.
Leary, O. C.
Leary, Timothy
McCready, L. T.
McKenna, F. P.
McMann, W. H.
Malone, Charles
Noyes, William
O'Brien, W. J. L.
O'Keefe, D. T.
Ordway, M. D.
Perry, A. P.
Reid, I. E. R.
Richardson, M. W.
Robinson, W. H.
Rollins, E. T.
Smith, Theobald
Spear, E. D.
Stedman, J. C.
Stone, J. G.
Taylor, F. L.
Turnbull, F. M.
Vickery, L. F.
Woodworth, J. D. R.

Kingston (Plymouth).
Holmes, A. B.

Lakeville (Bristol North).

Lancaster (Worcester).
Beckley, C. C.

Lanesborough (Berkshire).
Downing, F. C.

LAWRENCE (Essex North).
†Abbot, S. W.
Allen, G. S.
Bain, J. B.
Bannon, J. H.
Bartley, J. J.
Beely, L. G.
Bier, M. D.
Birmingham, R. M.
Burgess, C. J.
Burnham, J. F.
Bushold, F. G.
Calitri, Constant
Carleton, C. G.
Chesley, A. E.
Cody, H. C.
Conlon, F. A.
Cregg, F. A.
Cutter, A. H.
Cyr, E. E.
Daly, T. J.

LAWRENCE (continued).
Deacy, J. J.
Dearborn, H. F.
Dorgan, J. A.
Dorion, Kinton
Dow, G. W.
Forster, R. W.
Fuller, E. P.
Grant, W. V.
Hancock, A. W.
Hilton, J. J. H.
Hogan, J. A.
Howard, J. F.
Howe, G. P.
Hughes, P. J.
Joyce, T. F.
Kazanjian, H. P.
Kurth, G. E.
Lawlor, E. F.
Lemieux, T. A.
Lovek, J. A.
Manahan, H. W.
Massé, J. B.
McAllister, F. D.
McArdle, J. J.
McGauran, M. S.
McKallagat, P. L.
Merrill, W. H.
Moeckel, C. R.
Murphy, T. W.
Nevers, H. H.
Oeser, P. R.
O'Sullivan, J. J.
Redmond, T. H.
Reed, V. A.
Riordan, W. D.
Sargent, G. B.
Sargent, O. F. L.
Schwartz, Myer
Simon, A. L.
Sinclitico, Giuseppe
Siskind, A. L.
Sullivan, M. F.
Sullivan, W. J.
Uniac, T. V.
Walch, J. F.

Lee (Berkshire).
Hassett, J. J.
Markham, E. W.

Leicester (Worcester).
(See also: Rochdale.)
McNeish, Alexander

Lenox (Berkshire).
Carroll, M. J.
Jaques, H. P.

Leominster (Worcester North).
(See also: North Leominster.)
Bigelow, C. E.
Brigham, C. S.
Currier, W. E.
Hall, H. P.
Nye, H. R.
Pierce, A. H.
Pitcher, H. B.
Shaughnessy, T. A.
Shultis, F. C.
Wheeler, A. A.

Leverett (Franklin).

Lexington (Middlesex South).
(See also: North Lexington.)
Barnes, W. L.
Piper, F. S.
Smithwick, M. P.
Tilton, J. O.
Tyler, W. M.
Valentine, H. C.

Leyden (Franklin).

Lincoln (Middlesex South).
(See also: South Lincoln.)
Loring, R. G.

Littleton (Middlesex North).

Longmeadow (Hampden).
(See also: East Longmeadow.)

LOWELL (Middlesex North).
Alling, M. L.
Baker, C. S.
Bellehumeur, D. S.
Benner, B. R.
Bertrand, A. E.
Blanchard, P. D.
Boyle, J. F.
Brady, C. N.
Brady, F. R.
Brunelle, Pierre
Bryant, M. D.
Caisse, G. E.
Carroll, T. F.
Cassidy, J. J.
Clark, E. J.
Coburn, H. F.
Collins, W. M.
Dennett, A. G.
Eaton, W. G.
Field, J. B.
Finnegan, F. A.
Fishman, Maurice
French, C. E.
Gage, F. L.
Gage, J. A.
Gardner, A. R.
Gillard, A. E.
Halloran, T. J.
Halpin, A. J.
†Huntress, Leonard
Jackson, W. B.
Johnson, J. B. A.
Johnson, W. A.
Jones, R. LeR.
Jones, W. M.
Kearney, J. P.
Lambert, J. H.
Lamoureaux, J. E.
†Lathrop, W. H.
Lavalée, G. O.
†La Vigne, A. W.
Lawler, W. P.
Leahy, G. H. A.
Le May, A. M.
Livingston, C. B.
Livingston, E. G.
Loughran, J. F.
Mahoney, M. P.
Mahoney, F. R.
McAdams, J. P.
McCarty, J. J.
McCluskey, R. J.
McGannon, T. G.
Meehan, P. J.
Mehan, J. A.
Meigs, J. V.
Meigs, R. J.
Mignault, Rodrigue
Murphy, E. M.
Murphy, F. P.
O'Conner, J. B.
Pachanian, S. K.
†Parker, M. G.
Parker, R. W.
Pillsbury, B. H.
Pillsbury, F. F.
Pillsbury, G. H.
†Pinkham, G. E.
Plunkett, H. B.

LOWELL (continued).
Pulsifer, Nathan
Randall, G. M.
Robertson, E. A.
Rodger, J. V.
Rogers, J. A.
Roughan, C. M.
Ryan, W. F.
†Sanders, C. B.
Shaw, A. E.
†Shaw, T. P.
Simpson, C. E.
Smith, F. H.
Smith, T. B.
Stewart, R. C.
Sullivan, J. F.
Sumner, H. H.
†Swan, C. W.
Sweetsir, C. L.
Tighe, M. A.
Viles, C. A.
Welch, E. J.
Wilson, C. D.
Young-Slaughter, E. E.

Ludlow (Hampden).
Hoyt, P. A.

Lunenburg (Worcester North).
Woods, C. E.

LYNN (Essex South).
Abbott, H. E.
†Ahearne, C. A.
Bangs, C. H.
Bedard, J. A.
Bennett, H. P.
Berg, T. A. J.
Bixby, O. E.
Blair, O. C.
Blaisdell, J. H.
Breed, N. P.
Burrows, M. C.
Carr, G. L.
Chicoine, I. H.
Clarke, H. C.
Cobb, C. M.
Darling, A. E.
Davis, H. L.
Davis, S. R.
De Langle, C. P.
Dennison, A. S.
Devlin, P. C.
Donovan, M. R.
Fraser, W. L.
Garipay, E. P.
Grady, T. F.
Grant, J. H.
Gray, G. H.
Hagopian, L. G.
Harriman, Perley
Harris, A. E.
Harris, W. DeB.
Hartman, Gustave
Hassett, L. W.
Hawes, A. T.
†Hayden, D. H.
Hennessey, T. F.
Hoitt, C. L.
Hopkins, W. T.
Jenkins, C. E.
Johnson, H. A.
Jones, E. W.
Jones, J. A.
Joslyn, A. E.
Judkins, C. L. M.
Judkins, F. L.
Kirkpatrick, G. H.
Lane, F. A. (East Lynn)
Lemaire, W. F. (East Lynn)
Little, W. B.
Lougee, F. T.

LYNN (continued).
Lougee, G. W.
Lovejoy, C. A.
Lovell, C. D. S.
Lyons, G. A.
McIntyre, F. J.
MacRobbie, Alexander
Mangan, J. J.
Manix, E. T.
Marshall, W. R.
Martel, Stanislaus
Martin, A. H.
Martin, J. B.
Mathes, R. W.
Metzger, Butler
Morse, F. A.
Munroe, H. B.
Nathanson, E. S.
Newhall, A. L.
Newhall, H. F.
Newhall, H. W.
O'Keefe, E. S.
O'Reilly, W. F.
O'Shea, J. F.
Pinkham, J. G.
Quennell, W. L.
Rich, C. E.
Richardson, B. F.
Robins, S. A.
Roddy, M. B. (East Lynn).
Ruppel, C. E. F.
Ruppel, M. D.
Sheldon, C. C.
Shepherd, W. G.
Smith, M. C.
Stockbridge, A. H.
Stone, C. E.
Stone, F. E.
Trask, J. W.
Tucker, A. W.
Wainshel, P. W.
Ward, W. G.
White, Everett
White, J. R.
Worthen, C. A.

Lynnfield (Essex South).
Freeman, F. W.

MALDEN (Middlesex South).
Barron, E. W.
Brown, R. N.
Bychower, Victor
Conley, B. F.
Corbett, J. J.
Cummings, M. E.
Deal, G. F.
Fales, A. C.
Gallagher, N. A.
Gay, F. W.
†Goodwin, R. J. P.
Griffin, A. G.
Hartwell, W. W.
Hoberman, Samuel
Hunt, W. E.
Johnson, H. S.
Jones, C. D.
Kingsbury, W. W.
Konikow-Bucholz, A. F.
Lawrence, J. W.
Lougee, W. W.
MacDonald, W. C.
MacMichael, E. H.
MacNeil, S. S. J.
McBain, W. H.
McCarthy, C. D.
McCarthy, L. F.
†Norris, A. L.
Pavlo, S. G.
Plummer, F. J.
Plummer, F. W.

MALDEN (continued).
Prior, C. E.
Proctor, J. W.
Ryder, Godfrey
Smith, W. F.
Staples, C. H.
†Stevens, A. J.
Thomas, C. L.
Thompson, R. H.

Manchaug (Sutton).
Couillard, P. L.

Manchester (Essex South).
Blaisdell, G. W.
Glendenning, R. T.

Mansfield (Bristol North).
Allen, W. H.
Cook, J. W.
Dunbar, F. H.
Latham, B. M.
Spaulding, J. D.

Marblehead (Essex South).
Eveleth, S. C.
Greenwood, A. M.
Hall, H. J.
Ireson, F. R.
Sanborn, P. L.

Marion (Bristol South).
Cobb, A. C.
Dunham, H. B.

Marlborough (Middlesex South).
Chalmers, H. E.
Hoitt, E. G.
McCarthy, T. F.
Redfearn, Joseph
Reilly, T. E.
Robinson, H. A.
Stevens, R. E.
Warner, C. T.

Marshfield (Plymouth).
Bartlett, C. W.

Mashpee (Barnstable).

Mattapan (Norfolk) (BOSTON).
Behrman, R. A.
Cheever, A. J.
Cheever, C. A.
Cox, S. F.
Fleming, P. J.
Grover, J. I.
Guild, T. E.
Kelley, R. E. S.
McCarthy, F. P.
St. Denis, J. N.
Scannell, J. J.
Stearns, R. T.
White, A. J.
Winchester, G. W.

Mattapoisett (Bristol South),
Blaine, W. E.
Tilden, I. N.

Maynard (Middlesex South).
Hamblen, Howard

Medfield (Norfolk).
Mitchell, Arthur

MEDFORD (Middlesex South).
(See also: West Medford.)
Barrett, E. W.
Burke, W. T.
Burrell, H. C.

MEDFORD (continued).
Chandler, N. F.
Clark, J. C. D.
Clark, M. W.
Cleaves, J. E.
Donnell, H. A.
Fleming, E. R.
Gahan, P. F.
Ilsley, F. R.
Killam, F. H.
MacKinnon, O. L.
Parker, W. A.
Sise, L. F.

Medway (Norfolk).
(See also: West Medway.)
Yeaton, G. W.

MELROSE (Middlesex East).
(See also: Melrose Highlands.)
†Clark, J. S.
Fay, J. H.
Fish, E. C.
Hopkins, J. W.
Jack, E. S.
Jackson, H. B.
Leonard, R. D.
Marr, E. L.
Perley, R. D.
Pike, F. F.
Raynes, M. B.
Sims, F. R.
Small, A. E.
Stratton, R. R.

Melrose Highlands (Melrose).
Gage, A. T.
Harlow, C. W.
Provandie, P. H.

Mendon (Worcester).

Merrimac (Essex North).
Sweetsir, F. E.

Methuen (Essex North).
Baketel, R. V.
Cushman, H. L.
Lawlor, R. H.
Parr, John

Middleborough (Bristol North).
Coolidge, Sumner
Elliott, Alfred
†Ellis, G. L.
Holmes, D. H.

Middlefield (Hampshire).

Middleton (Essex South).
Ewing, G. W.

Milford (Worcester).
French, J. M.
Keith, H. L.
Knight, M. W.

Millbury (Worcester).
Brown, A. A.
Church, C. A.
Hurd, A. G.
Lincoln, J. R.

Millis (Norfolk).

Milton (Norfolk).
(See also: East Milton.)
Bartol, E. F. W.
Edsall, D. L.
Forbes, Alexander
Kite, W. C.
Lane, W. A.
Pierce, G. B.
Pierce, M. V.
Rackemann, F. M.
Williams, C. H.

Mittineague (West Springfield).
Downey, H. A.

Monroe (Franklin).

Monson (Hampden).
Ellis, F. W.
Jackson, C. W.
King, G. E.
Thom, D. A.

Montague (Franklin).
(See also: Turner's Falls.)
Cooke, G. A.

Monterey (Berkshire).

Montgomery (Hampden).

Mount Washington (Berkshire).

Nahant (Essex South).
Cusick, L. F.

Nantucket (Bristol South).
Grouard, J. S.

Natick (Middlesex South).
(See also: South Natick.)
Bancroft, G. A.
Baum, E. G.
Burke, M. F.
Cochran, W. J.
Cook, C. H.
Sylvester, W. H.
Walcott, W. W.

Needham (Norfolk).
(See also: Needham Highlands.)
Coppinger, S. E.
DeLue, F. S.
†Kingsbury, A. D.
†Mansfield, H. T.
Parker, F. D.
Pease, C. W.
Schirmer, J. W.

Needham Highlands (Needham).
Mitchell, William

NEW BEDFORD (Bristol South).
Allen, H. C.
Atchison, C. M.
Bonnar, J. M.
Bonney, C. A., Jr.
Brunelle, A. L.
Bullard, J. T.
Canney, E. R.
Cody, E. F.
Connor, C. F.
Croacher, A. W.
Dehn, E. W.
Derby, C. A.
Foster, E. E.
Gardner, E. D.
Hathaway, J. G.
Hayes, S. W.
Hough, G. de N.
Hudnut, F. J.
Johnson, E. St. J.
Kirby, H. C.
Leary, C. J.
Lowney, D. J.
Mandell, A. H.
Marsden, George
McAllester, J. J. H.
Moncrieff, W. A.
†Nickerson, W. J.
Nield, W. A.
Nietsch, W. E. L.

NEW BEDFORD (continued).
O'Brien, D. P.
O'Connor, P. H.
Paquin, J. U.
Pearce, G. G.
Perras, L. A.
Perry, H. E.
Peterson, C. A. B.
Pitta, J. C. da S.
Pothier, J. C.
Potter, L. F.
Pratt, C. A.
Pratt, D. D.
†Prescott, C. D.
Prescott, H. D.
Robbins, E. E.
Robbins, E. S.
St. Germain, J. P.
Salles, J. M.
Seaver, E. P., Jr.
Senesac, A. N.
Stetson, F. E.
Stevens, H. L.
†Tucker, E. T.
Turner, W. K.
Weaver, H. V.
Webber, A. P.
Weeks, J. F.
Wheeler, E. H.
Whitney, E. M.
Winslow, B. S.
Wood, H. W.
Young, E. W.

New Braintree (Worcester).

Newbury (Essex North).

NEWBURYPORT (Essex North).
Day, C. C.
Hamilton, R. De L.
Healy, T. R.
Hurd, R. C.
Little, A. N.
Nason, A. C.
Noyes, E. H.
Peter, A. J.
†Pillsbury, W. W.
Shaw, J. W.
Snow, F. W.
Tigh, Frederick
Toppan, R. L.

New Marlborough (Berkshire).

New Salem (Franklin).

NEWTON (Middlesex South).
(See also: Newton Center, Newton Highlands, Newton Upper Falls, Newtonville, West Newton, Auburndale, Chestnut Hill, Waban.)
Abbott, F. H.
Cummings, A. C.
Dempsey, J. E.
†Eddy, G. S.
Gallagher, T. M.
Hopkinton, George
Leary, A. J.
Marcy, H. O., Jr.
Marston, W. W.
Maskell, L. J.
Mellus, Edward
Moore, Howard
O'Donnell, F. M.
Painter, C. F.
Pearson, C. L
Reid, W. D.
Ripley, W. L.
Stanton, Joseph
†Stone, L. R.
Stubbs, F. R.
Webber, F. W.
Young, J. H.

Newton Center (Newton).
Andrews, E. A.
†Crawford, S. M.
Friedman, L. V.
Hood, M. G.
Loring, R. P.
May, G. E.
Sylvester, P. H.
Watters, Henry
West, G. L.

Newton Highlands (NEWTON).
Bartlett, P. C.
Brickett, B. H.
Mellen, E. W. A.
Thompson, C. A.
Withee, F. E.

Newton Upper Falls (NEWTON).
†Everett, W. S.
McOwen, W. H.

Newtonville (NEWTON).
Baker, D. E.
Clark, F. R.
Hunt, H. O.
Hunt, W. O.
Thayer, H. W.
†Trow, W. M.

Norfolk (Norfolk)

Norfolk Downs (QUINCY).
Sweeney, M. T.

North Abington (Abington).
Rand, R. B.
Wheatley, F. G.

NORTH ADAMS (Berkshire).
Brown, M. M.
Brown, O. J.
Brown, W. E.
Giguere, A. J.
Jones, L. A.
Matte, J. H. A.
†Millard, H. J.
Riley, J. H.
Russell, E. E.
Stafford, F. D.
Thompson, G. H.
Vrooman, E. M.

North Amherst (Amherst).
Stowell, Joab.

NORTHAMPTON (Hampshire).
(See also: Florence.)
Adams, W. H.
Ball, A. N.
Brown, E. W.
Clark, S. A.
Collins, J. D.
Collins, W. J.
Cooney, M. E.
Dow, F. E.
Fahey, J. C.
Fay, J. M.
Gardner, C. R.
Gilman, Florence
Hanson, J. G.
Hayes, J. E.
Hitchcock, J. S.
Houston, J. A.
Janes, B. F., Jr.
Leeper, M. E.
McCormick, A. H.
Minshall, A. G.
Perry, H. B.
†Seymour, Christopher
Shores, H. T.
Thayer, G. D.
Thomas, E. E.

NORTH ANDOVER (Essex North).
Daly, J. J.
Smith, F. S.

NORTH ATTLEBOROUGH (Bristol North).
Carley, F. J.
Gerould, J. B.
Kilby, H. S.
Shoemaker, A. B.
Ward, E. S.

NORTHBOROUGH (Worcester).
†Barnes, H. J.
Stanley, J. M.

NORTHBRIDGE (Worcester).
(See also: Whitinsville.)

NORTH BROOKFIELD (Worcester).
Phelan, E. F.

North Chelmsford (CHELMSFORD).
Varney, F. E.

North Dana (DANA).
Ellis, A. H.

North Easton (EASTON).
McCabe, F. J.
Porter, R. B.
Stevenson, W. M.
Tilden, F. E.

NORTHFIELD (Franklin).
Newton, A. L.
Philbrick, R. H. (East)
Wood, N. P.

North Grafton (GRAFTON).
Clapp, F. H.
Pattrell, A. E.
Smith, W. L.
Stevenson, E. A.

North Leominster (LEOMINSTER).
†Neilson, William

North Lexington (LEXINGTON).
†Webster, J. R.

North Oxford (OXFORD).
Stone, Byron

NORTH READING (Middlesex East).
Averill, C. W.
Burns, N. B.
MacCorison, C. C.

North Weymouth (WEYMOUTH).
Drake, W. A.

North Wilbraham (WILBRAHAM).
Damon, A. L.

NORTON (Bristol North).
Round, A. M.

NORWELL (Plymouth).

NORWOOD (Norfolk).
Field, H. M.
Fogg, I. S.
Gould, C. S.
Hagerty, J. J.
Hartwell, A. S.
Norton, E. C.
Plimpton, L. H.
Riemer, H. B. C.

OAKHAM (Worcester).

OAK BLUFFS (Bristol South).

ORANGE (Franklin).
Maher, H. C.
Smith, H. F. M.
Ten Broeck, S. J.

ORLEANS (Barnstable).
Besse, F. A.

Osterville (BARNSTABLE).
Kinney, D. D'A.

OTIS (Berkshire).

OXFORD (Worcester).
(See also: North Oxford.)
Fletcher, R. S.
Woodward, J. R.

PALMER (Hampden).
(See also: Bondsville, Thorndike and Three Rivers.)
Cleaves, H. F. T.
Flood, Everett
Greene, R. A.
Hodskins, M. B.
Schneider, J. P.

PAXTON (Worcester).

PEABODY (Essex South).
Carroll, H. G.
Foss, R. E.
Foster, H. K.
Hickey, J. J.
Jordan, J. F.
Kelley, L. K.
Kennard, H. D.
Shanahan, John
Tucker, S. C.
Varney, E. M.

PELHAM (Hampshire).

PEMBROKE (Plymouth).
(See also: Bryantsville.)

PEPPERELL (Middlesex North).
Heald, C. G.
Qua, L. R.

PERU (Berkshire).

PETERSHAM (Worcester North).

PHILLIPSTON (Worcester North).

PITTSFIELD (Berkshire).
Bartlett, O. L.
Blanchard, R. H.
Burton, S. C.
Colt, Henry
Coolidge, F. S.
Currier, W. H.
Dodd, I. S. F.
Eisner, M. S.
England, A. C.
Finkelstein, Nathan
Flournoy, Thomas
Flynn, J. J.
Frawley, W. T.
Hennelly, T. P.
Hill, L. R.
Howard, E. H.
Howe, J. D.
Hunt, G. P.
Kelly, W. P.
Lally, W. J.
Langlois, J. A.
†Leavitt, W. W.
Leslie, C. T.
Littlewood, Thomas

PITTSFIELD (continued).
Mayberry, F. E.
Mellen, H. G.
Mercer, W. J.
Merrill, A. P.
Messer, E. R.
Paddock, B. W.
Paddock, W. L.
Richardson, C. H.
Roberts, F. A.
Schneider, H. A.
†Stephenson, F. B.
Sylvester, A. W.
Taylor, E. H.
Thomes, J. B.
Tracy, W. L.
Wilder, W. O.
Withington, A. B.
Wood, M. A.
Woodruff, R. A.

PLAINFIELD (Hampshire).

PLYMOUTH (Plymouth).
Brown, W. G.
Burns, H. H.
Churchill, J. D.
†Cowles, Edward
Hill, E. D.
Hitchcock, H. R.
Prince, C. O.
Reed, L. B.

PLYMPTON (Plymouth).

PRESCOTT, (Hampshire).

PRINCETON (Worcester).
Lewis, E. S.

PROVINCETOWN (Barnstable).
Birge, E. F.
Birge, W. S.
Curley, C. P.

QUINCY (Norfolk South).
(See also: Atlantic, Norfolk Downs, West Quincy, Wollaston.)
Blanchard, W. H.
Burke, F. R.
Bushnell, E. H.
Ellsworth, S. W.
Gordon, J. A.
Hardwick, S. C.
Hunting, N. S.
Jones, F. E.
Lynch, C. J.
McCausland, W. J.
Middleton, W. J.
Reardon, B. D.
Reynolds, J. T.
Ryder, G. H.
Sargent, W. L.
Sheahan, G. M.

RANDOLPH (Norfolk South).
Granger, F. C.
Higgins, G. V.
Myrick, A. W.

RAYNHAM (Bristol North).

READING (Middlesex East).
Brown, W. J.
Dow, G. F.
†Edes, R. T.
Halligan, E. M.
Henderson, C. R.
Richmond, E. D.
Smalley, F. L.

REHOBOTH (Bristol North).

REVERE (Suffolk).
Andrews, F. F.
Bond, W. G.
Cummings, E. F.
Monahan, E. J.
Morris, J. S.
Newton, W. C.
Walker, William
Walsh, J. E.
Wilkins, G. A.

RICHMOND (Berkshire).

Rochdale (LEICESTER).
Leach, E. M.
Leach, H. M.

ROCHESTER (Bristol South).

ROCKLAND (Plymouth).
Corey, F. H.
Frame, Joseph
Knight, C. E.
Osgood, Gilman

ROCKPORT (Essex South).
Cleaves, E. E.
Stone, G. A. (Pigeon Cove)
Tupper, A. M.

Roslindale (Norfolk) (BOSTON).
(See also: Forest Hills.)
Allen, A. N.
Beede, M. J.
Ford, J. F.
King, N. J. Q.
Lynch, D. L.
Sawyer, A. R.
Sawyer, E. LeR.
Smith, J. H.
Steele, A. E.
Stevens, Seriah
Whitcombe, C. R.

ROWLEY (Essex North).
Pedrick, S. A.

Roxbury (Norfolk) (BOSTON).
Abbe, E. M.
Adams, John
Addelson, Nathan
Adler, H. M.
Ascher, Joseph
Bardwell, F. A.
Barry, J. H.
Bartlett, W. O.
Bernard, B. L.
†Bolles, W. P.
Bradley, C. S.
Breck, Samuel
Bresnahan, J. F.
Brooks, E. M.
Brownrigg, J. S.
Callanan, S. A.
Clement, G. W.
Coupal, J. F.
Coyne, T. J.
Cronin, M. J.
Cushing, E. W.
Cushman, G. T.
Daly, B. T.
Darling, C. B.
Davidson, K. M.
Deans, H. C.
Dunbar, F. C.
†Edson, P. O'M.
Emery, W. H.
Farr, E. L.
Frank, Morris
Galligan, E. T.
Gavin, J. H.

Roxbury (continued).
Gerstein, Maurice
Glunts, David
Goodman, Samuel
Gray, A. M.
Gray, E. T.
Greene, T. F.
Greene, W. H.
Guthrie, A. D.
Hall, J. B., Jr.
Harvey, W. W.
Hermann, O. J.
Hodges, A. D.
Homans, John
Hornor, A. A.
Howard, H. B.
Howard, M. E. P.
Johnson, D. J.
Keeler, W. B.
Knowlton, C. D.
Konikow, M. J.
Libby, E. N.
Linenthal, Harry
Littlefield, S. H.
Lockary, J. L.
Macdonald, C. W.
Macdonald, F. C.
Mansfield, J. A.
Martin, Edward
Martin, J. M.
Mason, G. McC.
May, J. S.
McCormick, T. J H.
McGurn, W. J.
McLaughlin, J. I.
McLeod, J. S.
Moore, M. T. V.
†Moran, J. B.
Murphy, E. T.
Murphy, T. J.
Newburgh, L. H.
Ober, F. R.
O'Brien, T. J.
O'Connor, T. H.
O'Keefe, A. M.
Olin, Harry
Parks, E. L.
Patch, W. T.
Patten, S. K.
Pigeon, J. C. D.
Powers, E. P.
Richmond, Simon
Sanborn, J. W.
Schmidt, F. S.
Schorer, C. B. J.
Scott, G. H.
Shay, C. E.
Shay, T. M.
Shohan, Joseph
Shulman, D. H.
Snow, F. S.
Sternberg, J. E.
Stetson, F. W.
Sughrue, D. F.
Sullivan, J. L.
Thayer, Eugene
Turetzky, W. L.
Walker, I. C.
Wardwell, J. K.
Wernick, B. G
†Wescott, W. H.
West, E. G.
White, H. W.
White, P. D.
White, W. A.
†Williams, E. T.
Winn, C. H.
Young, R. R.

ROYALSTON (Worcester North).

RUSSELL (Hampden).

RUTLAND (Worcester).
Chamberlain, W. E.
Crane, B. T.
Washburn, Elliott

Sagamore (BOURNE).
Curry, E. F.

SALEM (Essex South).
Ahearne, C. A., Jr.
Atwood, F. S.
Blair, G. K.
Burbeck, E. K.
Carlton, F. C.
†Choate, David
Curtis, C. L.
Donaldson, J. F.
Elliot, H. L.
Field, M. T.
Finnegan, P. J.
Goodell, G. Z.
Hennessey, W. W.
Kittredge, Thomas
LeBoeuf, A. T.
Lesses, Max
McDermott, W. V.
Noyes, W. N.
Peirson, E. L.
Perkins, R. S.
Phippen, Hardy
Phippen, W. G.
Porier, Emile
Porier, Horace
Robbins, F. G.
Rushford, E. A.
Sargent, A. N.
Sheehan, W. J.
†Shreve, O. B.
Simpson, J. E.
Sturgis, B. F., Jr.
Towle, E. D.
Tucker, G. E.
Wilson, C. M.

SALISBURY (Essex North).

SANDISFIELD (Berkshire).

SANDWICH (Barnstable).
Beale, S. M., Jr.
Currier, C. R.
Procter, T. W.

SAUGUS (Essex South).
(See also: Cliftondale.)
Gale, G. W. (East)
Parcher, G. C.

SAVOY (Berkshire).

Saxonville (FRAMINGHAM).
Carr, C. J.

SCITUATE (Plymouth).
(See also: Scituate Center, Scituate Harbor.)

Scituate Center (SCITUATE).
Handy, H. T.

Scituate Harbor (SCITUATE).
Alexander, T. B.

SEEKONK (Bristol North).

SHARON (Norfolk).
Dole, C. F.
Griffin, W. A.
McIntosh, Herbert

SHEFFIELD (Berkshire).
Wakefield, A. T.

Shelburne (Franklin).
(See also: Shelburne Falls).

Shelburne Falls (Shelburne).
†Canedy, F. J.
Guild, B. T.
Upton, C. L.

Sherborn (Middlesex South).
Lancaster, W. B.

Shirley (Worcester North).
(See also: Shirley Village.)

Shirley Village (Shirley).
Peirce, C. J.

Shrewsbury (Worcester).
Bliss, W. H.
Chase, E. L.

Shutesbury (Franklin).

Somerset (Bristol South).

SOMERVILLE (Middlesex South).
(See also: West Somerville.)
Allison, C. E.
Bateman, F. E.
Bell, R. D.
Bell, W. A.
Bolton, C. J.
†Booth, E. C.
Buffum, H. E.
Carvill, A. H.
Carvill, L. M.
Caswell, B. H.
Curtis, H. F.
Dailey, E. J.
Dervin, L. J.
Durell, T. M.
Finnerty, C. W.
Follett, A. M.
Gunter, F. C.
Haché, H. C.
Hanscom, Sanford
Hatchett, W. J.
Hegerty, J. G.
Hodgdon, R. F.
Lee, W. T.
Maguire, C. F.
Maguire, E. L.
McCaffrey, C. F.
Merrill, A. E.
Meyer, E. J.
Mongan, C. E.
Morse, F. L.
Newton, E. R.
Place, R. W.
Raymond, L. H.
†Sanborn, E. A.
Sawin, C. D.
Sewall, E. F.
Shanahan, T. J.
Smith, F. G.
Stephens, F. N.
Stoodley, H. M.
Towle, C. C.
Trueman, H. S.
Walker, H. A.
†White, E. L.
White, M. W.
Whiting, G. W. W.
†Willis, Reuben
Yenetchi, H. A.

Southampton (Hampshire).

Southborough (Worcester).

South Boston (BOSTON).
Ayers, C. E.
Bancroft, W. B.
Boland, E. S.
Buckley, P. T.
Cross, W. P.
Denning, F. J.
Devine, W. H.
Doggett, F. F.
Fletcher, R. W.
Gallivan, W. J.
Gavin, M. F.
Hurley, E. D.
Jakmauh, P. J.
Keenan, H. J.
Morris, G. P.
Morris, J. G.
Reddy, J. W.
Redmond, J. W.
Regan, J. J.
Rochford, R. A.
†Ruddick, W. H.
Ryder, W. I.
Sheehan, W. J.
Sheridan, P. E. A.
Slattery, J. R.
Stuart, F. W.
Timmins, E. F.
Tracy, E. A.
Tynan, J. P.

South Braintree (Braintree).
Dame, F. R.
Merriam, F. H.
Sullivan, C. A.
Watson, J. W.

Southbridge (Worcester).
Bradford, C. C.
Cutler, M. F.
Olin, F. H.
Pagé, J. G. E.
Reed, L. C.
Reed, W. G.

South Dartmouth (Dartmouth).
Cushman, A. B.
Richards, G. L.

South Deerfield (Deerfield).
Suitor, H. A.

South Dennis (Dennis).
Davis, C. A.

South Hadley (Hampshire).
(See also: South Hadley Falls.)
Lang, H. B.
Patterson, A. M.
Raymond, C. S.
Underhill, E. C.

South Hadley Falls (South Hadley).
Doonan, H. E.
Leland, F. LeR.

South Hamilton (Hamilton).
Davis, C. H.

South Lincoln (Lincoln).
Blodgett, S. H.
Hart, J. S.

South Natick (Natick).
Hills, C. E.

South Sudbury (Sudbury).
Oviatt, G. A.

South Weymouth (Weymouth).
Emerson, G. E.
Granger, K. H.
Mayberry, E. N.
Tirrell, V. M.

Spencer (Worcester).
Peck, A. F.
Sanborn, F. J.

SPRINGFIELD (Hampden).
(See also: Indian Orchard.)
Adams, C. B.
Adams, E. B.
Anthony, J. C.
Bacon, T. S.
Baldwin, E. E.
Bates, E. A.
Beardsley, W. H.
Benner, R. S.
Birnie, J. M.
Blair, O. R.
Boyd, F. P.
Boyd, J. V. W.
Boyer, J. N.
Brigham, F. C.
Broga, W. W.
†Brooks, L. S.
Brown, D. J.
Brown, E. M.
Budington, H. F.
Burke, G. H.
Byrnes, H. F.
Calkins, C. H.
Calkins, I. R.
†Calkins, Marshall
Camfill, R. E.
Carleton, Dudley
Carleton, Ralph
Chapin, D. L.
Chapin, L. D.
Chapin, W. H.
Chapman, C. R.
Claffy, J. McM.
Clapp, A. M.
†Clark, David
Cort, P. M.
Craig, W. G.
Dalton, G. F.
Davidson, H. J. D.
Davis, E. L.
Deane, W. H.
Dexter, F. F.
Dillon, M. J.
Downey, C. J.
Dubois, E. C.
Eastman, A. C.
Emerson, H. C.
Everett, F. L.
Finch, G. H.
Foss, G. H.
Furcalow, C. L.
Galvin, A. H.
Gates, E. A.
Gaylord, J. F.
Godfrey, T. F.
Goodell, William
Graham, J. P.
Guild, E. H.
Harriman, D. E.
Herrick, J. T.
Hewitt, C. E.
Hill, I. C.
Hillard, J. P.
Hirsch, H. L.
Hooker, C. P.
Hopkins, F. E.
Hosley, W. A.
Hubbard, G. W.
Irwin, V. J.
Johnston, C. C.

SPRINGFIELD (continued).
Judd, E. H.
Keefe, D. E.
Kennedy, C. F. J.
Kennedy, C. M.
Kilroy, Philip
Kinloch, R. A.
La Rochelle, F. D.
Leary, W. C.
Lewandowski, J. M.
Lewis, S. A.
Lynch, C. F.
Lynch, P. M.
McClean, G. C.
Mahoney, E. J.
Maloney, J. M.
Maloney, T. A.
Marr, R. McC.
Martin, H. C.
McGinity, J. T.
Merritt, V. S.
Moody, F. F.
Moriarty, P. M.
Mulcahy, W. E.
Myers, E. Y.
Naurison, J. Z.
†Nims, E. B.
Ober, R. B.
Parmelee, W. J.
Peck, R. H.
Pomeroy, W. H.
Rabinovitz, Bernard
†Rice, A. R.
Rice, A. G.
Ritter, Henry
Rumrill, S. D.
Russell, S. J.
Russell, W. B.
Ryan, S. E.
Schadt, G. L.
Schillander, C. A.
Seelye, R. H.
Shaw, W. A.
Slutskin, M. L.
Smith, H. L.
Smith, W. A.
Spaid, C. J.
Squier, A. O.
†Stebbins, G. S.
Stoddard, M. J.
Stoneman, E. A.
Street, C. E.
Streeter, J. F.
Sullivan, E. C.
Sullivan, J. C.
Sweeney, E. J.
Sweet, F. B.
Tracy, J. M.
Van Allen, H. W.
Weiser, W. R.
Weston, G. D.
White, B. P.
Wilbur, S. M.
Wilcox, H. H.
Williams, A. C.
†Woods, G. L.
Zimmerman, Henry

State Farm (BRIDGEWATER).
Baker, L. A.
Emerson, E. B.
Kenney, C. B.
Weller, J. H.

STERLING (Worcester).
Devere, F. H.

STOCKBRIDGE (Berkshire).
Eaton, H. D.
Haven, H. C.

STOCKBRIDGE (continued).
Riggs, A. F.
Stockwell, H. E.

STONEHAM (Middlesex East).
Blenkhorn, James
Kerrigan, J. H.
Nickerson, G. W.
Park, F. E.
Sheehan, M. D.

STOUGHTON (Plymouth).
Faxon, N. W.
Faxon, W. O.

STOW (Middlesex South).

STURBRIDGE (Worcester).
(See also: Fiskdale.)

SUDBURY (Middlesex South).
(See also: South Sudbury.)

SUNDERLAND (Franklin).
Moline, Charles

SUTTON (Worcester).
(See also: Manchaug.)

SWAMPSCOTT (Essex South).
Bicknell, R. E.
Godfrey, J. W.
Grimes, Loring
Lowd, H. M.

SWANSEA (Bristol South).
†Wellington, J. L.

TAUNTON (Bristol North).
(See also: East Taunton.)
Atwood, C. A.
†Bassett, E. J.
Beaulieu, F. X.
Clark, T. F.
Crandell, A. R.
Cusick, T. F.
Dean, R. D.
†Deane, A. S.
Fox, W. Y.
Galligan, E. J.
Goss, A. V.
Hubbard, F. A.
Learoyd, C. B.
MacDonald, D. F.
McGraw, A. J.
Mehegan, D. J.
Milot, A. F.
Murphy, E. F.
Murphy, F. A.
Murphy, J. B.
Murphy, J. L.
O'Brien, J. F.
†Paige, Nomus
†Perry, Martha
Pierce-Higgins, Eudora
†Presbrey, S. D.
Provost, R. G.
Ripley, H. G.
Robinson, T. J.
Sayles, J. B.
White, H. A.

TEMPLETON (Worcester North).
(See also: Baldwinsville.)
Greenwood, S. E.

TEWKSBURY (Middlesex North).
Coburn, H. R.
DeWolf, C. W.
Flaherty, E. J.
Holmes, H. F.
Larrabee, H. M.

TEWKSBURY (continued).
Nichols, J. H.
Perry, Sherman
Roach, A. J.
Strom-Lindsay, Marie
Willoughby, E. C.

Thorndike (PALMER).
Dunphy, H. A.

Three Rivers (PALMER).
Giroux, Charles
Miller, S. O.

TISBURY (Bristol South). No P. O.
Post Office address, Vineyard Haven.
Davis, S. T.
Mayhew, O. S.

TOLLAND (Hampden).

TOPSFIELD (Essex South).
Baxter, C. P.
Sanborn, Byron

TOWNSEND (Worcester North).
(See also: West Townsend.)
†Chandler, L. G.

TRURO (Barnstable).

Turner's Falls (MONTAGUE).
Kemp, H. M.
Leary, P. F.
McGillicuddy, R. A.
Messer, C. C.

TYNGSBOROUGH (Middlesex North).
Lambert, F. De F.

TYRINGHAM (Berkshire).

UPTON (Worcester).

UXBRIDGE (Worcester).
Griswold, M. L.
Johnson, W. L.

Waban (BROOKLINE).
Bessey, E. E.

Waban (NEWTON).
McGee, F. M.

WAKEFIELD (Middlesex East).
Crosby, L. M.
Dutton, Charles
Dutton, Richard
Elder, F. O.
Heath, J. W.
†Jordan, Charles
O'Leary, J. A.
Sopher, C. L.
Tyzzer, E. E.
Watts, J. P.
Woodbury, F. T.

WALES (Hampden).

WALPOLE (Norfolk).
(See also: East Walpole.)
Fuller, F. H.
Proctor, T. M.

WALTHAM (Middlesex South).
Bell, Conrad
Collins, Richard
Courtney, T. J.
Cousins, N. W.
Dascombe, O. L.
Dennen, R. W.

WALTHAM (continued).
Desmond, C. F.
Fourtin, E. R. P.
Fuller, C. B.
Hinchey, Richard
Holbrook, Bradbury
Hoyt, W. S.
Jarvis, W. F.
Lewis, J. P.
MacDonald, F. L.
McCormick, C. J.
Mosher, M. J.
Stiles, F. M.
Taylor, R. A.
Willis, C. A.
Wood, H. A.
Worcester, Alfred

Ware (Hampshire).
†Blodgett, A. G.
Gafney, H. D.
Miner, W. W.
Pearson, M. W.
Ryan, D. M.

Wareham (Bristol South).
Morse, C. E.

Warren (Worcester).
DeLand, C. A.
Phelps, O. W.

Warwick (Franklin).
Goldsbury, P. W.

Washington (Berkshire).

Watertown (Middlesex South).
Chase, C. O.
Creely, O. S.
†Davenport, B. F.
Higginbotham, F. A.
Kelley, E. J.
Roble, A. H. P.

Waverley (Belmont).
Abbot, E. S.
Clark, L. B.
Fernald, W. E.
Flett, P. McN.
Hoch, T. A.
Hollings, C. B.
Packard, F. H.
Russell, F. J.
Tuttle, G. T.
Wallace, A. M.
Whitney, R. L.
Woodill, E. E.

Wayland (Middlesex South).

Webster (Worcester).
Bragg, L. R.
Généreux, J. O.
Hart, G. F.
Littlefield, G. O.
Roy, J. N.
Thompson, J. J.

Wellesley (Norfolk)
(See also: Wellesley Hills.)
Anthony, G. C.
Bancroft, E. A.
Hatch, Royal
Proctor, F. I.
Raymond, K. P.
†Stone, M. C.
White, L. E.

Wellesley Hills (Wellesley).
Cleveland, H. H.

Wellesley Hills (continued).
Greenwood, Allen
†Hazelton, I. H.
Hewins, P. W.
Jones, G. N.
†Macdonald, W. L.
Schofield, O. L.
Stanwood, F. A.

Wellfleet (Barnstable).
Bell, C. J.

Wendell (Franklin).

West Acton (Acton).
Staples, Hall

Westborough (Worcester).
Ayer, T. H.
Cilley, D. P.
Clark, A. U. F.
Knight, C. S.
Mahoney, W. F.
Newton, R. S.

West Boylston (Worcester).

West Bridgewater (Plymouth).

West Brookfield (Worcester).
Cowles, F. W.

West Dennis (Dennis).
Osborne, E. S.

West Falmouth (Falmouth).
†Cutter, Ephraim

Westfield (Hampden).
Atwater, J. B.
Brace, G. W.
Chadwick, H. D.
Chisholm, M. D.
Clark, F. T.
Davis, F. D.
Douglas, A. J.
Dutton, J. M.
Janes, G. H.
Maroney, P. J.
Noble, A. F.
Smith, E. S.

Westford (Middlesex North).
Sherman, W. H.
Wells, O. V.

West Gardner (Gardner).
Donnelly, J. B.

Westhampton (Hampshire).

West Harwich (Harwich).
Nickerson, J. P.

West Medford (MEDFORD).
Bean, C. F. K.
Drake, R. A.
†Wight, D. W.
Wilkins, S. H.

West Medway (Medway).
†Bemis, C. A.
Quint, N. P.

Westminster (Worcester North).
Kelley, C. M.

West Newbury (Essex North).
†Warren, Orin

West Newton (NEWTON).
Atkinson, L. D. R.

West Newton (continued).
Chandler, H. B.
Fisher, I. J.
Jack, L. H.
Knowles, W. F.
Lowe, F. M.
Macomber, Donald
Nielsen, E. B.
Paine, N. E.
Sherman, F. M.
Wells, D. W.

Weston (Middlesex South).
Orr, S. S.
Van Nüys, Fresenius
Worthen, C. F.

Westport (Bristol South).
Burt, E. W.

West Quincy (QUINCY).
Ash, J. H.
Dion, T. J.

West Roxbury (Roxbury)
(BOSTON).
Gorham, G. H.
Hamilton, B. E.
Howell, W. W.
Jillson, F. C.
Knight, C. L.
Knudson, M. M.
Lougee, J. L.
Ordway, Thomas
Reagh, A. L.
Shadman, A. J.
Stevens, H. B.
Stevens, S. E.
Tenney, J. A.
Watters, W. H.

West Somerville (SOMERVILLE).
Ayres, H. W.
Blake, A. H.
Bond, W. L.
Bryant, G. W.
Cholerton, Herbert
Gillis, J. E.
Hoole, J. E.
Liverpool, C. H.
McLean, J. A.
Mahoney, G. C.
†Makechnie, H. P.
Miles, G. A.
Osgood, G. E.
Pillsbury, E. D.
Pote, L. H.
Richardson, C. A. C.
Roderick, C. E.
Ruston, W. D.
Sylvester, N. R.
Wagner, E. S.
Whitcher, B. R.

West Springfield (Hampden).
(See also: Mittineague.)
Bostick, W. J.
Corcoran, G. B.

West Stockbridge (Berkshire).

West Tisbury (Bristol South).

West Townsend (Townsend).
Ely, R. S.

Westwood (Norfolk).

Weymouth (Norfolk South).
(See also: East, North and South Weymouth.)
Pease, L. W.

WHATELY (Franklin).

Whitinsville (NORTHBRIDGE).
Balmer, W. E.
Barry, E. W.
Harriman, C. H.

WHITMAN (Plymouth).
Beaulieu, E. J.
†Copeland, H. F.
Dyer, E. A.
Hanley, F. J.
Lovell, C. E.
MacKeen, A. A.
Pulsifer, W. H.
Rood, A. D.

WILBRAHAM (Hampden).
(See also: North Wilbraham.)

WILLIAMSBURG (Hampshire).
(See also: Haydenville.)
Hayes, J. G.

WILLIAMSTOWN (Berkshire).
(See also: Blackinton.)
Adriance, Vanderpoel
Howard, F. H.
†Mather, E. E.

Willimansett (CHICOPEE).
Mead, F. A.

WILMINGTON (Middlesex East).
Buzzell, D. T.
Dodge, G. F.

WINCHENDON (Worcester North).
Bush, J. S. F.
Henry, J. G.
Holzer, W. F.
Kenney, W. C.
Pelletier, A. G.
†Russell, F. W.
Sullivan, M. G.

WINCHESTER (Middlesex East).
Allen, C. J.
Ash, J. E.
Brown, A. L.
Cummings, M. A.
Cutter, I. T.
Dennett, D. C.
Gale, H. A.
Hammond, Philip
Hersey, H. W.
†Hildreth, J. L.
Lowell, W. H.
McCarthy, C. F.
Mead, G. N. P.
Ordway, C. E.
Putnam, Ralph
Tozier, C. H.

WINDSOR (Berkshire).

WINTHROP (Suffolk).
Adams, L. D.
Coates, E. A.
French, G. H.
Johnson, O. E.
Metcalf, E. H.
Morse, F. H.
Parker, R. B.
Soule, H. J.
White, L. N.

WOBURN (Middlesex East).
Bixby, J. P.
Blake, H. G.

WOBURN (continued).
Carroll, J. P.
Caulfield, T. E.
Chalmers, Robert
Conlin, R. E.
Hutchings, J. H.
Keleher, W. H.
Kelley, S. W.
Lane, A. C.
Lane, C. G.
McCormick, J. J.
O'Brien, C. T.
Stewart, V. C.
West, F. O.

Wollaston (QUINCY).
Adams, C. S.
Curtis, W. G.
Merritt, L. A.

WORCESTER (Worcester).
Adamian, P. A.
Adams, G. E.
Albee, G. M.
Andrews, B. F.
Atwood, A. W.
Auger, L. L.
Baff, Max
Baker, F. H.
Barnes, J. A.
Barrell, M. E.
Beal, H. W.
Bemis, J. M.
Bergin, S. A.
Berry, Gordon
†Berry, J. C.
Bieberbach, W. D.
Bigelow, E. B.
Bowers, G. F. H.
Boyden, A. H.
Brennan, J. J.
Brown, G. C.
Bryant, Frederick
Burley, B. T.
Butterfield, G. K.
Byrne, C. J.
Cahill, J. W.
Carney, P. J.
Cassels, L. R.
Chamberlin, H. A.
Charteris, M. A.
Clark, W. I., Jr.
Clement, M. W.
Colberg, P. A.
Cook, P. H.
Cronin, H. W.
Cronin, T. J.
Cross, A. E.
Cummings, J. J.
Curran, J. F.
Daudelin, S. A.
Deering, G. E.
Delahanty, W. J.
Denning, W. E.
Disbrow, E. P.
Dix, G. A.
Donoghue, J. J.
Donohue, J. J.
Drew, C. A.
Duggan, J. T.
Emerson, B. K.
Emery, G. E.
Estabrook, C. T.
Everett, O. H.
Fallon, M. F.
Farnham, J. M. W.
Fay, F. G.
Fitzgerald, C. P.
Flynn, J. J.
Fogerty, W. C.
Foley, T. J.

WORCESTER (continued).
Foskett, G. M.
Fox, M. B.
Gage, Homer
George, F. W.
Getchell, A. C.
Gilfillan, D. R.
Gilman, W. R.
Greene, R. W.
Gwynne, S. C.
Hagerty, H. J.
Haigh, G. W.
Halloran, M. J.
Harkins, J. F.
Harrower, David
Hartnett, J. H.
Haviland, N. C. B.
Haviland, W. C.
Hill, G. H.
Holmes, M. S.
Horsman, H. L.
Hunt, E. L.
Jackson, A. W.
†Jordan, G. A.
Kenney, T. F.
Kenyon, H. J.
Kinnicutt, Roger
Lemaire, W. W.
Lincoln, G. C.
Lincoln, Merrick
Lindsay, J. I.
Lovell, D. B.
Lussier, C. A.
Lynch, W. F.
McClusky, H. L.
MacFadyen, J. A.
MacKerrow, H. G.
Magune, F. L.
†Marble, J. O.
Marsh, A. W.
Marston, C. H.
Mason, B. H.
Mathews, R. F.
McDonald, J. W.
McEvoy, T. E.
McGillicuddy, J. T.
McIvor, G. A.
McKibben, W. W.
McKoan, J. W.
McSheehy, T. C.
Miller, L. C.
Moore, J. F.
Murphy, A. F.
Nightingale, James
O'Callaghan, M. V.
O'Connell, A. E.
O'Connor, D. F.
O'Connor, J. F.
O'Connor, J. W.
O'Day, G. F.
O'Meara, M. J.
Osborne, C. A.
Overlock, M. G.
Parker, E. L.
Peterson, H. O.
Phelps, O. D.
Pofcher, E. H.
Power, G. A.
†Quinby, H. M.
Randall, C. W.
Rice, J. E.
Robinson, Solomon
Rochette, E. C.
Rockwell, A. E. P.
Rose, W. H.
Scribner, E. V.
Seelye, W. C.
Shannahan, R. J.
Shattuck, A. M.
Shaw, T. B.
Shea, P. O.

WORCESTER (continued).
Simmons, E. B.
Simmons, H. C.
Smith, Myrtle
Sparrow, G. A.
Stapleton, R. H.
Stevens, C. B.
Stevens, W. C.
Stick, H. L.
Stowell, F. E.
Swan, R. W.
Swasey, Edward
Taylor, James, Jr.
Tripp, G. A.

WORCESTER (continued).
Trowbridge, E. H.
Ward, G. O.
Ward, R. J.
Watkins, R. P.
Wetherbee, L. E.
Wheeler, C. D.
Wheeler, Leonard
Whitaker, C. W.
White, Levi
Woodward, L. F.
Woodward, S. B.
†Workman, W. H.
Yoosuf, A. K.

WORTHINGTON (Hampshire).
Lyman, W. R.

WRENTHAM (Norfolk).
Faxon, E. W.
Ferguson, E. H.
Perkins, F. H.
Wallace, G. L.

YARMOUTH (Barnstable).
(See also: Yarmouth Port.)

Yarmouth Port (YARMOUTH).
Sears, S. H.

NON-RESIDENTS, BY STATES AND COUNTRIES

1914

CALIFORNIA.
Boyd, S. G., San Francisco.
†Crocker, S. E., Los Angeles.
Dwight, H. L., San Diego.
Goss, F. W., Sacramento.
Johnson, W. S., Los Angeles.
Knowlton, H. E., National City.
Lucas, W. P., San Francisco.
MacDonald, A. E., Ontario.
Mansur, L. W., Los Angeles.
Parker, A. M., Santa Maria.
Williams, C. C., Pasadena.

CONNECTICUT.
†Bragdon, G. A., Middletown.
Browne, W. T., Norwich.
LaMoure, C. T. E., Lakeville.
Loewe, L. J., Haddam.
Lord, S. A., Cromwell.
†Page, C. W., Hartford.

FLORIDA.
Vaughan, J. H., Tampa.

GEORGIA.
Comey, P. P., Augusta.

ILLINOIS.
Couch, M. C., Chicago.

INDIANA.
Bliss, G. S., Fort Wayne.
Woodbury, H. E., Indianapolis.

IOWA.
Grover, A. L., Iowa City.

MAINE.
Allen, S. W., York Harbor.
Averill, G. G., Waterville.
Cummings, D. F., Cherryfield.
Eastman, T. J., South Berwick.
Hall, W. D., Port Clyde.
Hedin, C. J., West Pownal.
Hills, F. L., Bangor.
Jackson, F. W., Jefferson.
Reynolds, R. L., Waterville.
Richardson, H. K., Bradford.
Stevens, H. E. E., Lewiston.
Swift, H. M., Portland.
Vosburgh, S. E., Augusta.
Williams, H. E., Mount Vernon.

MICHIGAN.
Hendricks, H. V., Traverse City.
Noble, A. I., Kalamazoo.

MINNESOTA.
†Hayes, C. C. Fairbault.
McGrath, B. F., Rochester.
Marcley, W. J., Minneapolis.
Tomkies, J. S., Rochester.

MISSOURI.
Murphy, F. T., St. Louis.
Tobey, E. N., St. Louis.

NEW HAMPSHIRE.
Allen, Bradford, Nashua.
†Balcom, G. F., Swanzey.
†Blood, R. A., George's Mills.
Bowles, G. H., Plymouth.
Bradford, H. W., Wolfborough.
Brownrigg, A. E., Nashua.
Cain, W. G., Nashua.
Faulkner, H. K., Keene.
Gile, J. M., Hanover.
Graves, R. J., Concord.

NEW HAMPSHIRE (continued).
Holmes, J. F., Manchester.
Hubbard, O. H., Gilsum.
Kean, M. E., Manchester.
Laton, G. P., Salem.
Libby, M. G., Newport.
MacMillan, A. L., Jr. Concord.
Pike, F. W., Portsmouth.
Powell, M. A., Laconia.
Proctor, J. D., Keene.
Smith, C. S., Manchester.
Stowell, E. C., Dublin.
Stowell, S. R., Dublin.
Taft, A. A., Keene.
Thompson, W. A., Manchester.
Thorpe, B. D., Newport.
Tower, E. A., Derry.
Wallace, A. S., Nashua.
Wilkins, G. C., Manchester.

NEW JERSEY.
Christiernin, C. L., East Orange.
Dunham, H. B., Glen Gardner.
Ferguson, R. H., East Orange.
Hahn, A. J., Pattenburg.

NEW YORK.
Breed, N. P., Douglaston, L. I.
Bryant, W. S., New York.
Cockett, M. S., New York.
Coolidge, J. N., New York.
Fisher, C. I., New York
Fisk, A. L., New York.
Holden, E. M., New York.
Johnson, A. E., Jr., New York.
Laighton, F. M., New York.
MacKay, W. H., Poughkeepsie.
McCarthy, T. F., Jamaica, L. I.
McPherson, Ross, New York.
Monty, A. H., Brooklyn.
Ogden, J. B., New York.
Overlander, J. L., New York.
Pratt, M. R., Syracuse.
Richards, C. M., New York.
Sanborn, F. R., New York.
Shoninger, L. S., New York.
Smith, S. B., New York.
Tibbetts, J. T., Mineola.
Wilder, R. S., Briarcliff Manor.

NORTH CAROLINA.
Achorn, J. W., Pine Bluff.
Champion, M. E., Greenville.
Packard, G. H., White Rock.

OHIO.
Schwab, Emanuel, Cincinnati.
Wells, A. T., Canton.

OREGON.
Whiteside, G. S., Portland.

PENNSYLVANIA.
Finlayson, A. D., Warren.
Fuller, D. H., Philadelphia.
Law, K. H., Erie.
McRae, A. J., Wilkes-Barre.
Mitchell, H. W., Warren.
Mitchell, M. P., Warren.
Simonds, O F., Philadelphia.
Wheeler, L. A., Wernersville.

RHODE ISLAND.
Blake, LeGrande, Riverside.
Borden, G. E., Adamsville.
Darrah, R. E., Newport.
Davenport, J. H., Providence.
Gerber, Isaac, Providence.

RHODE ISLAND (continued).
Hamblet, M. L., Wallum.
Hayes, A. E., Providence.
Holt, C. H., Pawtucket.
Keefe, P. H., Providence.
MacLeod, N. M., Newport.
Means, P. C., Apponaug.
Messinger, H. C., Providence.
Munro, W. L., Providence.
Murphy, E. V., Newport.
O'Meara, J. G., Providence.
Pettingill, O. S., Wallum Lake.
Sullivan, J. E., Providence.
Turner, C. S., Providence.

SOUTH CAROLINA.
Laws, S. G., Spartanburg.

TEXAS.
Slater, E. M., Denton.

VERMONT.
Bush, A. D., Burlington.
Higgins, J. H., Union Village.
Marshall, A. T., Chelsea.

WASHINGTON.
Clarke, T. G., Langley.

WEST VIRGINIA.
Boland, L. F., Welch.

WYOMING.
Berry, L. M., Junction.

DISTRICT OF COLUMBIA.
Murphy, J. P. H., Washington.

PANAMA CANAL ZONE.
Bates, L. B., Ancon.

U. S. ARMY.
Bauer, L. H.
Newton, R. W.
Wood, Leonard.

U. S. NAVY.
Jenness, B. F.
Moran, C. L.

FOREIGN.
Calkin, B. H., Stellarton, N. S.
Clark, H. A., Port Limon, Costa Rica.
Cumston, C. G., Geneva, Switzerland.
Hagen-Bürger, G. L., Havana, Cuba.
Hanley, J. J., Motherwell, Scotland.
MacPherson, W. E., St. Marc, Haiti.
†Prince, J. P., Durban, South Africa.
Storrs, H. R., Vancouver, B. C.
Street, L. A. B., Shanghai, China.
Townsend, David, River Glade, N. B.

ADDRESS UNKNOWN.
Albert, Lionel Louis.
Baker, Osmyn.
Brown, Melvin James.
†Brown, Marshall Lebanon.
Canfield, William Chase.
Cary, Foster Harrington.
Craig, Daniel Hiram.
Ermentrout, Sallie Justina.
Hinds, Robert Watson.
McKelvey, Alexander Dunbar.
Metcalf, Julia Tracy.
O'Donnell, George Thomas.
Phipps. Walter Andros.
Sears, Julia Seaton.
Smith, Frank Simpson.
Tracy, Thomas Henry.
Tryon, Geneva.

NUMERICAL SUMMARY OF FELLOWS BY DISTRICTS

GIVING CITIES AND TOWNS

[Names of Cities are printed in Capitals.]

1914.

BARNSTABLE DISTRICT.

Established 28 May, 1840.

Barnstable	8	Orleans	1
Bourne	2	Provincetown	3
Brewster	1	Sandwich	3
Chatham	1	Truro	
Dennis	3	Wellfleet	1
Eastham		Yarmouth	1
Falmouth	4		
Harwich	5	Total	33
Mashpee			

Active 31. Retired 2.

BERKSHIRE DISTRICT.

Established 7 Oct., 1807.

Adams	4	NORTH ADAMS	12
Alford		Otis	
Becket	1	Peru	
Cheshire		PITTSFIELD	43
Clarksburg		Richmond	
Dalton	3	Sandisfield	
Egremont		Savoy	
Florida		Sheffield	1
Great Barrington	6	Stockbridge	4
Hancock		Tyringham	
Hinsdale		Washington	
Lanesborough	1	West Stockbridge	
Lee	2	Williamstown	4
Lenox	2	Windsor	
Monterey			
Mount Washington		Total	83
New Marlborough			

Active 79. Retired 4.

BRISTOL NORTH DISTRICT.

Established 31 May, 1849.

Attleborough	12	Norton	1
Dighton	1	Raynham	
Easton	4	Rehoboth	
Freetown	1	Seekonk	
Lakeville*		TAUNTON	32
Mansfield	5		
Middleborough*	4	Total	65
North Attleborough	5		

Active 59. Retired 6.

BRISTOL SOUTH DISTRICT.

Established 3 April, 1839.

Acushnet		NEW BEDFORD	61
Chilmark		Oak Bluffs	
Dartmouth	2	Rochester	
Edgartown	1	Somerset*	
Fairhaven	2	Swansea*	1
FALL RIVER	56	Tisbury	2
Gay Head		Wareham	1
Gosnold		Westport	1
Marion	2	West Tisbury	
Mattapoisett	2		
Nantucket	1	Total	132

Active 128. Retired 4.

ESSEX NORTH DISTRICT.

Established 6 Oct., 1841.

Amesbury	10	Newbury	
Andover	6	NEWBURYPORT	13
Boxford		North Andover	2
Georgetown	2	Rowley	1
Groveland	1	Salisbury	
HAVERHILL	52	West Newbury	1
LAWRENCE	65		
Merrimac	1	Total	158
Methuen	4		

Active 153. Retired 5.

ESSEX SOUTH DISTRICT.

Established 7 June, 1804.

BEVERLY	16	Nahant	1
Danvers	6	Peabody	10
Essex	1	Rockport	3
GLOUCESTER	20	SALEM	34
Hamilton	3	Saugus	6
Ipswich	3	Swampscott	4
LYNN	94	Topsfield	2
Lynnfield	1	Wenham	
Manchester	2		
Marblehead	5	Total	212
Middleton	1		

Active 204. Retired 8.

FRANKLIN DISTRICT.

Established 27 May, 1851.

Ashfield	1	Monroe	
Bernardston	2	Montague	5
Buckland		New Salem	
Charlemont		Northfield	3
Colrain	2	Orange	3
Conway		Rowe	
Deerfield	3	Shelburne	3
Erving	1	Shutesbury	
Gill		Sunderland	1
Greenfield	12	Warwick	1
Hawley		Wendell	
Heath		Whateley	
Leverett			
Leyden		Total	37

Active 36. Retired 1.

HAMPDEN DISTRICT.

Established 28 May, 1840.

Agawam	1	Montgomery	
Blandford		Palmer	9
Brimfield	1	Russell	
Chester	1	Southwick	
CHICOPEE	8	SPRINGFIELD	139
Granville	1	Tolland	
Hampden		Wales	
Holland		Westfield	12
HOLYOKE	45	West Springfield	3
Longmeadow	1	Wilbraham	1
Ludlow	1		
Monson	4	Total	227

Active 219. Retired 8.

---

* By vote of the Council, June 7, 1910, Somerset and Swansea were transferred to Bristol South, and Lakeville and Middleborough to Bristol North.

HAMPSHIRE DISTRICT.

Established 5 Oct., 1831.

Amherst	8	NORTHAMPTON	26
Belchertown	1	Pelham	
Chesterfield	1	Plainfield	
Cummington	2	Prescott	
Easthampton	6	Southampton	
Enfield	1	South Hadley	6
Goshen		Ware	5
Granby		Westhampton	
Greenwich		Williamsburg	3
Hadley	2	Worthington	1
Hatfield	3		
Huntington	4	Total	69
Middlefield			

Active 64. Retired 5.

MIDDLESEX EAST DISTRICT.

Established 2 Oct., 1850.

Burlington		Wilmington	2
MELROSE	17	Winchester	16
North Reading	3	WOBURN	15
Reading	7		
Stoneham	5	Total	76
Wakefield	11		

Active 73. Retired 3.

MIDDLESEX NORTH DISTRICT.

Established 2 Oct., 1844.

Acton	1	Groton	1
Bedford	2	Littleton	
Billerica	2	LOWELL	92
Boxborough		Pepperell	2
Carlisle		Tewksbury	10
Chelmsford	3	Tyngsborough	1
Dracut	1	Westford	2
Dunstable			
		Total	117

Active 108. Retired 9.

MIDDLESEX SOUTH DISTRICT.

Established 2 Oct., 1850.

Arlington	15	MARLBOROUGH	8
Ashland	1	Maynard	1
Belmont	14	MEDFORD	19
Brighton*	22	Natick	8
CAMBRIDGE	125	NEWTON	65
Charlestown*	21	Sherborn	1
Concord	6	SOMERVILLE	69
EVERETT	16	Stow	
Framingham	18	Sudbury	1
Holliston	2	WALTHAM	22
Hopkinton	1	Watertown	6
Hudson	2	Wayland	
Lexington	7	Weston	3
Lincoln	3		
MALDEN	39	Total	495

Active 474. Retired 21.

NOFOLK DISTRICT.

Established 2 Oct., 1850.

Bellingham		Milton	10
Brookline	101	Needham	8
Canton	3	Norfolk	
Dedham	7	Norwood	8
Dorchester*	110	Roslindale*	12
Dover	2	Roxbury*	110
Foxborough	6	Sharon	3
Franklin	2	Walpole	3
Hyde Park*	9	Wellesley	15
Jamaica Plain*	42	West Roxbury*	14
Mattapan*	15	Wrentham	4
Medfield	1		
Medway	3	Total	488
Millis			

Active 470. Retired 18.

NORFOLK SOUTH DISTRICT.

Established 1 Oct., 1884.

Braintree	8	QUINCY	25
Cohasset	4	Randolph	3
Hingham	5	Weymouth	9
Holbrook	3		
Hull	2	Total	59

Active 59.

PLYMOUTH DISTRICT.

Established 2 Oct., 1850.

Abington	3	Norwell	
Avon	2	Pembroke	1
Bridgewater	8	Plymouth	8
BROCKTON	50	Plympton	
Carver		Rockland	4
Duxbury	3	Scituate	2
East Bridgewater		Stoughton	2
Halifax		West Bridgewater	
Hanover	2	Whitman	8
Hanson			
Kingston	1	Total	95
Marshfield	1		

Active 91. Retired 4.

SUFFOLK DISTRICT.

Established 7 June, 1804.

BOSTON*	639	Winthrop	9
CHELSEA	7		
Revere	9	Total	664

Active 643. Retired 21.

---

* A part of Boston.

* Except Brighton and Charlestown, which are in the Middlesex South District, and Dorchester, Hyde Park, Jamaica Plain, Mattapan, Roslindale, Roxbury, West Roxbury, and that part of Boston lying south of a line beginning at Dorchester Bay opposite end of Preble Street, and running in a general north-easterly direction through the middle of Preble and Swett (now Southampton) Streets to Northampton Street, then by the middle of Northampton Street to Washington Street, then by the middle of Washington Street to Camden Street, then by the middle of Camden and Gainsborough Streets to Huntington Avenue, then by the middle of Huntington Avenue to the Huntington Avenue entrance of the Back Bay Park, then across the Park westerly to the waterway known as Muddy Brook, then by Muddy Brook to St. Mary's Street, then by the middle of St. Mary's Street to the Charles River, which are in the Norfolk District.

WORCESTER DISTRICT.

Established 7 June, 1804.

Auburn		Northborough	2
Barre	2	Northbridge	3
Berlin		North Brookfield	1
Blackstone	1	Oakham	
Bolton		Oxford	3
Boylston	1	Paxton	
Brookfield	3	Princeton	1
Charlton		Rutland	3
Clinton	11	Shrewsbury	2
Dana	1	Southborough	
Douglas	1	Southbridge	6
Dudley		Spencer	2
Grafton	6	Sterling	1
Hardwick		Sturbridge	1
Harvard	1	Sutton	1
Holden	3	Upton	
Hopedale		Uxbridge	2
Hubbardston	1	Warren	2
Lancaster	1	Webster	6
Leicester	3	Westborough	6
Mendon		West Boylston	
Milford	3	West Brookfield	1
Millbury	4	WORCESTER	168
New Braintree			
		Total	253

Active 245. Retired 8.

WORCESTER NORTH DISTRICT.

Established 25 May, 1858.

Ashburnham	2	Phillipston	
Ashby	1	Royalston	
Athol	3	Shirley	1
Ayer	3	Templeton	5
FITCHBURG	36	Townsend	2
Gardner	13	Westminster	1
Leominster	11	Winchendon	7
Lunenburg	1		
Petersham		Total	86

Active 81. Retired 5.

RECAPITULATION.

DISTRICT SOCIETIES.	RETIRED	ACTIVE	TOTAL
Barnstable	2	31	33
Berkshire	4	79	83
Bristol North	6	59	65
Bristol South	4	128	132
Essex North	5	153	158
Essex South	8	204	212
Franklin	1	36	37
Hampden	8	219	227
Hampshire	5	64	69
Middlesex East	3	73	76
Middlesex North	9	108	117
Middlesex South	21	474	495
Norfolk	18	470	488
Norfolk South		59	59
Plymouth	4	91	95
Suffolk	21	643	664
Worcester	8	245	253
Worcester North	5	81	86
Fellows resident in Massachusetts	132	3217	3349
Fellows resident in other States and Countries	7	150	157
	139	3367	3506
Fellows, addresses unknown	1	16	17
Whole number of Fellows in the Society, 1 Jan., 1915.	140	3383	3523

NOTICE TO FELLOWS OF THE SOCIETY.

THE BOSTON MEDICAL AND SURGICAL JOURNAL, the Official Organ of the Society, is issued weekly and sent only to those who have paid their assessments, and to such Honorary and Retired Fellows as may apply for them to the Librarian.

Fellows who fail to receive the Publications should notify the Librarian at once.

Fellows are requested to send prompt notice to the Librarian of changes of residence or office address or of errors noted in this Directory.

EDWIN H. BRIGHAM, M.D.,
Librarian.

8 The Fenway, Boston.

PRESS OF
JAMAICA PRINTING
COMPANY
BOSTON, MASS.

THE BOSTON
Medical and Surgical
JOURNAL

HE OFFICIAL ORGAN OF THE MASSACHUSETTS MEDICAL SOCIETY

XII THURSDAY, MARCH 25, 1915. Single Copies 15 Cents. Five Dollars per Annum

CONTENTS

ADDRESS

The Rôle of the State Sanatorium in the Tuberculosis Problem. *By Elliott Washburn, M.D.*, Rutland, Mass.

ORIGINAL ARTICLES

Remarks on the Diagnosis and Tteatment of Pulmonary Tuberculosis. *By Bayard T. Crane, M.D.*, Rutland, Mass.

Mortality after Prostatectomy. *By Benjamin Tenney, M.D.*, Boston, and *Henry M. Chase, M.D.*, Boston.

A Study of the Efficiency of Mixed Toxins (Coley) in Inoperable Sarcoma. *By Torr W. Harmer, M.D.*, Boston.

MEDICAL PROGRESS

Eighth Report of Progress in Orthopaedic Surgery. *By Robert B. Osgood, M.D.; Robert Soutter, M.D.; Hermann Bucholz, M.D.; Harry C. Low, M.D.; Murray S. Danforth, M.D.*, Boston.

EDITORIALS

The Labor Clean Milk Bill Again.

Factors in the Duration of Pulmonary Tuberculosis.

The Importance of Rest in the Treatment of Graves' Disease.

Salaries of District Health Officers.

Enforcement of Law for Local Tuberculosis Institutions.

For complete table of contents, see first text page.

JUST ISSUED

llen's Local and Regional Anesthesia

This work is complete. You get history and evolution, principles, physiology, toxicology, and technic. You get a chapter on nerves and sensation, giving particular attention to *pain*—what it is and its psychic control, and a chapter on osmosis and diffusion. Each local anesthetic is taken up in detail, giving very special attention to *cocain* and *novocain*, pointing out their action on the nervous system, the value of adrenalin, paralysis caused by cocain anesthesia, control of toxicity. You get Crile's method of administering adrenalin and salt solution, the exact way to produce the intradermal wheal, to pinch the flesh for the insertion of the needle—all *shown* you step by step. You get Crile's *anoci-association;* anesthesia by quinin and urea, and by the magnesium salts, spinal and epidural analgesia, paravertebral, parasacral, intra-arterial, intravenous, and general anesthesia with local anesthetics. The production of local anesthesia in the various regions is taken up in detail. There is a section on *dental anesthesia.*

Illinois Medical Journal

"This book has gone deeply into the study of local anesthesia. It covers the field more completely than any other book we have seen, and any one doing surgery should possess a copy."

Pennsylvania Medical Journal

"This volume, so far as we know, is the only comprehensive American treatise on local anesthesia and should find a decided place. Will show a real effect on American surgery."

Octavo of 625 pages, with 255 illustrations. By Carroll W. Allen, M.D., Instructor in Clinical Surgery at Tulane University of Louisiana. With an Introduction by Rudolph Matas, M.D., Professor of Surgery at Tulane University of Louisiana. Cloth, $6.00 net; Half Morocco, $7.50 net.

3. SAUNDERS COMPANY West Washington Square, Philadelphia

Entered at the Post-office at Boston as second-class matter

The Boston
Hygienic Corset
Company

59 Temple Place
Telephone, Oxford 4131

Endorsed by Physicians

E. F. M.
SURGICAL CATGUT
INSURES
SAFETY FIRST
TO THE
SURGEON

SAFE STERILE STRONG SUPPLE CATGUT

PLAIN
CHROMIC
IODIZED

E. F. MAHADY COMPANY
Surgical and Hospital Supplies
671 BOYLSTON STREET, BOSTON, MASS.
Write for Prices and Samples

Current Literature Department

ABSTRACTORS.

LAURENCE D. CHAPIN, M.D. GEO. A. LELAND, JR., M
REGINALD FITZ, M.D. FRANCIS W. PALFREY, M
C. FROTHINGHAM, JR., M.D. EDWARD H. RISLEY, M.
TORR W. HARMER, M.D. GEORGE G. SMITH, M.D.
J. B. HAWES, 2D, M.D. LESLEY H. SPOONER, M.
FOSTER S. KELLOGG, M.D. WILDER TILESTON, M.D.
ROGER I. LEE, M.D. EDW. L. YOUNG, JR., M.

MEDICINE.

STREPTOCOCCUS VIRIDANS IN INFECTIONS OF THE U RESPIRATORY TRACT.

CECIL (*Arch. Int. Med.*, Jan., 1915) reports o study of the bacteriology of infections of the up respiratory tract, with special reference to the p played by streptococcus viridans in these cases. 89 such infections the streptococcus viridans was predominant organism in 50. In 85% of the ca this organism, or the pneumococcus or the strep coccus hemolyticus was concerned in the infecti Streptococcus viridans infections of the upper re ratory tract are characterized by their mild course a tendency to chronicity and frequent recurren owing in great measure to the short duration of acquired immunity. These infections, especially th of the tonsils, sinuses and alveolar sockets, are fr quently associated with endocarditis and arthri which are probably secondary to them. Autogen streptococcus viridans vaccines are of considera value in cases in which structural changes are not advanced, and also for the prevention of recurrence

[L. D. C

THE TREATMENT OF CONGENITAL SYPHILIS.

FINDLAY and ROBERTSON (*Quar. Jour. Med.*, Vo No. 30, Jan., 1915) are enthusiastic advocates of use of neosalvarsan in congenital syphilis. They e ployed considerably larger doses than those usua advised, from a minimum of .01 gm. per kilo bo weight, to .02, .03 and even .05 per kilo. Since, ho ever, their only immediate fatality after an injecti occurred 12 hours after a dose of .05 per kilo. would seem wiser to confine oneself to a dose of to .02 gm. per kilo in most cases. Neosalvarsan wa chosen in preference to old salvarsan because it ca be given safely in concentrated solutions, which re ders it much easier of administration in the case infants. The veins of the scalp were found to off the easiest place for the injection. The intramuscu method had to be given up on account of necros The drug was given dissolved in 4 c.c. of saline. Th injections were repeated weekly till negative Wasse mann reactions were obtained. Mercury was e ployed in addition to the salvarsan. The death-ra of their cases under the age of three months, treat with salvarsan plus mercury, was 43%; while wi mercury alone it was 71%.

Striking results were obtained by antenatal tre ment with neosalvarsan and mercury. Seven pre nant syphilitic mothers treated in this way all ga birth to healthy babies showing a negative Wasse mann reaction. These figures are comparable to tho of Calliot, who collected 145 such cases, treated wi salvarsan alone, with 92% of healthy offspring. thus appears that with efficient treatment of pre nant syphilitics it would be possible to stamp out co genital syphilis.

[W. T

NOTES OF FURTHER OBSERVATIONS UPON DYSPNEA A ITS RELATION TO BLOOD REACTION.

LEWIS and BANCROFT (*Quar. Jour. Med.*, Vol. 8, N 30, Jan., 1915) report further instances of diminish

(*Continued on page iv.*)

1915

The Boston Medical and Surgical Journal

Table of Contents

March 25, 1915

ADDRESS.

THE RÔLE OF THE STATE SANATORIUM IN THE TUBERCULOSIS PROBLEM. *By Elliott Washburn, M.D.*, Rutland, Mass..... 429

ORIGINAL ARTICLES.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS. *By Bayard T. Crane, M.D.*, Rutland, Mass... 433
MORTALITY AFTER PROSTATECTOMY BASED ON A STUDY OF 229 FATAL RESULTS. *By Benjamin Tenney, M.D.*, Boston, and *Henry M. Chase, M.D.*, Boston.......... 437
A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. A CRITICAL ANALYSIS OF 184 MICROSCOPICALLY PROVEN CASES. *By Torr Wagner Harmer, M.D.*, Boston. (Concluded.).......... 440

MEDICAL PROGRESS.

EIGHTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY *By Robert B. Osgood, M.D.; Robert Soutter, M.D.; Hermann Bucholz, M.D.; Harry C. Low, M.D.;* and *Murray S. Danforth, M.D.*, Boston. (Continued.).......... 448

REPORTS OF SOCIETIES.

SECTION OF GENERAL INFORMATION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. MEETING OF DECEMBER 14, 1914.. 452

BOOK REVIEWS.

Forty-Sixth Annual Report of the Secretary of State on the Registration of Births and Deaths, and Marriages and Divorces, in Michigan for the Year 1912.......... 453

EDITORIALS.

THE LABOR CLEAN MILK BILL AGAIN.......... 454
FACTORS IN THE DURATION OF PULMONARY TUBERCULOSIS...... 455
THE IMPORTANCE OF REST IN THE TREATMENT OF GRAVES' DISEASE.......... 456
SALARIES OF DISTRICT HEALTH OFFICERS.......... 457
ENFORCEMENT OF LAW FOR LOCAL TUBERCULOSIS INSTITUTIONS.. 457
MEDICAL NOTES.......... 458

OBITUARY.

RIGHT HON. SIR GEORGE TURNER, F.C.M.G., M.D., LL.D...... 461

CORRESPONDENCE.

THE WOUNDED ON THE FRENCH BATTLE LINE. "S.".......... 463
PATENT MEDICINES AND QUACKERY. *Hugh P. Greeley, M.D.*..... 465

MISCELLANY.

MEDICAL EDUCATION IN CHINA.......... 461
CHANGES IN THE MEDICAL CORPS, U. S. NAVY.......... 465
BELGIAN PHYSICIANS' RELIEF FUND.......... 465
INTERSTATE ASSOCIATION OF ANESTHETISTS.......... 466
U. S. CIVIL SERVICE EXAMINATION.......... 466
NOTICES, APPOINTMENTS, RESIGNATIONS, RECENT DEATHS, BOOKS AND PAMPHLETS RECEIVED.......... 466

Address

THE RÔLE OF THE STATE SANATORIUM IN THE TUBERCULOSIS PROBLEM.*

BY ELLIOTT WASHBURN, M.D., RUTLAND, MASS.,

Superintendent, Rutland State Sanatorium, Rutland, Mass.

IN Massachusetts, as elsewhere, the tuberculosis problem is the care, relief and cure, if possible, of those afflicted with the disease and the prevention of its spread to those not so afflicted.

In our attempts to solve the problem we have several existing agencies, which may be classified as State, Municipal and Private.

Of private agencies we have anti-tuberculosis societies and various philanthropic organizations which maintain tuberculosis camps, dispensaries and clinics, tuberculosis nurses, visiting nurses and social service workers.

Municipal agencies comprise local boards of health, municipal hospitals and dispensaries for the care of the tubercular, visiting nurses, and medical inspectors of school children.

The agencies maintained by the State include the Trustees of Hospitals for Consumptives, the State Department of Health, State Inspectors of Health, Industrial Health Inspectors, four State Sanatoria for the tubercular, the tuberculosis wards of the State Infirmary at Tewksbury, the Prison Hospital for the reception of male tubercular prisoners, the tuberculosis wards of the various state hospitals for the insane, and the follow-up nurse of the Trustees of Hospitals for Consumptives.

In this problem what is the rôle of the state sanatorium? How is it performing this rôle? Do the results obtained justify the expenditure of the large sums of money necessary for its maintenance and continuance?

The first state sanatorium in Massachusetts, and for that matter in the United States, was established at Rutland and opened its doors October 1, 1898. The original intent of those through whose wisdom and influence the sanatorium was made possible, was to provide a place in which early and favorable cases of pulmonary tuberculosis might, in the first instance, be restored to health and earning capacity, and, in the second instance, might become so educated at the sanatorium in the steps and precautions necessary to prevent the spread of the disease that upon returning to their homes they might act as disciples or apostles to carry the doctrine of prevention broadcast throughout the state or wherever they chanced to go.

As time went on it was found that this initial scope of the sanatorium was too narrow; that while it provided for the care of the early and favorable case it made no allowance for the care of that case which was advanced to the stage where hope of its arrest was either much lessened or was wholly lost, and which was often far more dangerous to the health of the community in which it existed than was the early case. Thus it became necessary in the absence of local facilities for the hospital care of such cases for the state to establish and maintain other sanatoria in which cases of the disease in all its stages might be received. So that to the original two functions of the state sanatorium was added this third, the care of the advanced case, not so much with the thought of getting him well as of removing from his home and community an active focus of the spread of the disease. Rutland was still reserved, and today is still reserved, as much as possible for the reception of the early cases.

---

* Read before the Medical Association of Northern Berkshire, at North Adams, Mass.

Time next demonstrated that while it was possible for the sanatorium to carry out in a satisfactory manner the first two of its functions it was not always possible to do so in the case of this third function—the care of the advanced case—because in many instances these advanced cases, placed in the state sanatoria far removed from their homes, refused to remain there and insisted upon returning to their homes. This was the not unnatural instinct of persons very ill and weekly growing worse, to be at home with their families and friends. To this fact, perhaps more than to any other, is due the establishment of local or municipal hospitals for the care of this disease, which is now mandatory upon cities in this Commonwealth and upon towns when so requested by the State Department of Health. The supreme hope is that eventually enough of these municipal hospitals will be established to care for most of the advanced cases which need hospital care and have established a legal settlement in their respective cities and towns. This would leave the state sanatoria for the care of the early cases and for such advanced cases as are "State cases" so called,—that is to say, those who have no municipal settlement, which would to a large extent do away with the present long waiting list of applicants for admission to all of the state sanatoria. Early cases are, as a rule, contented to remain in a state sanatorium, even if at some distance from home, so long as they continue to show improvement.

We find, therefore, that the rôle of the state sanatorium is of a three-fold nature,—the care and arrest of favorable cases, the education of its patients to the end that they may disseminate their knowledge of the methods necessary to prevent the spread of the disease, and the care of advanced cases, which makes possible their removal as foci of disease in their homes and communities.

How are the several functions of its rôle being performed?

In the sanatorium the care and arrest of favorable cases stands upon a tripod, of which one leg is rest, one leg is fresh air, and the third is a combination of a regulated diet and supervised exercise and work. To my mind the relative importance of the pedal extremities of this tripod is in this same order. Drug medicines play an extremely minor part in the "treatment" and unless used in connection with these three principal methods of attack ordinarily will utterly fail. Nor does the physician in private practice who prescribes medicine for his tuberculous patient, and stops there, fulfill his entire obligation to his patient.

Again, the sanatorium finds that rest, air and regulated life are not in themselves sufficient to restore favorable-stage patients to health and working capacity. The co-operation of the patient himself is a highly important factor; without it the "treatment" is not given a fair chance. Thus there enters the question of the personal equation of every patient, his temperament, his mental make-up, his willingness to carry out his instructions and the sanatorium rules in regard to the details of the treatment. So that we find today in our state sanatoria that we have to deal with two very distinct classes of patients and we so classify them, the "Sanatorium or Co-operating or I'll try" class and the "Hospital or Non-co-operating or I dont't much care," class. Already it has been demonstrated that more recoveries and more improved cases occur in patients of the "Sanatorium" class than in patients of the "Hospital" class. Those of the first class carry out the treatment as it is outlined for them to the best of their ability. Those of the second class either are careless and indifferent in their attitude or else are openly defiant to the rules laid down for the improvement of their physical welfare. The records show that those of the second class pay physically a heavy penalty for their indifference, neglect or willfulness.

More and more it is coming to be recognized that the sanatorium has not performed its whole duty to its favorable cases when it has merely restored them to health. They need something else which is quite essential and indeed vital to their future and that is their restoration to working, earning capacity. There is grave danger that prolonged residence in the sanatorium may, as Dr. Herman Biggs has so well said, "convert working invalids into fairly healthy loafers." Many enter the sanatorium who work almost up to the day of admission. The inherent danger exists that some may leave the sanatorium, restored to health, it is true, but by their long stay in the sanatorium rendered so "soft" so "out of training" for the task of earning their own living and, in some instances I fear, so saturated with the fixed idea that the State must take care of them, that they return to their communities unfit, physically and temperamentally, to work at supporting wages until after considerable periods of time have elapsed. I would by no means give the impression that this is true of all cases; far from it; but in some instances it does occur. In what way does the sanatorium seek to avoid this unfortunate phase? By a system of graduated and supervised work while in the sanatorium. Work is a necessary and important part of the treatment. graduated and carefully supervised work, commencing with a half hour daily and working slowly up to six or seven hours daily work of such kind as the sanatorium is able to provide. And in this last clause we find a weak spot in our treatment and a hindrance to the effective carrying out of our plan, for the sanatorium is able to provide only a limited amount of work and of very limited kinds.

The ideal carrying out of the plan would provide for every patient work similar to that to which his ante-sanatorium life has accustomed him. This is obviously out of the question in the sanatorium and all that we can provide is light work about the wards and grounds with an occasional job at carpentering for the men and sewing for the women. We need workshops in which light manual labor of a productive kind may be carried on under the watchful supervision of an officer paid for that sole purpose.

Such graduated, supervised work not only serves to occupy the patients' minds, to relieve the tedium of their sanatorium life and to keep them contented and out of mischief, but it serves the more important purpose of putting them in such physical condition that upon leaving the sanatorium they can at once enter upon a productive and self supporting life. So I say that such work is a very essential part of the treatment.

Occasionally we find the patient who flatly states that he does not propose to do any work unless he is paid for it; that he does not intend to work for the State for nothing. For such ingrates the Trustees have provided a remedy—dismissal. The law forbids our paying for such work, although in some sanatoria in other states, notably at Otisville, New York, the plan of paying patients for work has been found to work very well inasmuch as patients are thus enabled to send money home to their families and are themselves enabled to stay longer at the sanatorium than they otherwise would be able to stay.

At Rutland, ever since its opening, the custom has prevailed of taking suitable persons on as paid workers upon their discharge as patients. Through this custom many have been enabled to live and support themselves who might otherwise have been obliged to return to unsuitable, or unhealthy, conditions of climate, home surroundings or occupations, and who in all likelihood would under such conditions have broken down or become permanent dependents or have died. This custom, although it possesses certain advantages to the ex-patients as outlined, has also certain disadvantages as far as the economy and efficiency of sanatorium administration are concerned, into which we will not go. At the present time approximately fifty per cent. of all employees upon the Rutland pay-roll were at one time or another patients in the sanatorium.

The second function in the rôle of the state sanatorium is the education of its patients, its nurses, physicians and other employees. As far as the patients are concerned this education is imparted by talks to groups of patients or by individual conferences with individual patients but to a much greater extent by their constant observation of the methods employed at the sanatorium in the prevention of the spread of the disease from the sick to the well. Even patients of the "Hospital" class unconsciously assimilate considerable education in this manner while the majority of all patients are eager to learn not only how they themselves contracted the disease but also how they may when they leave the sanatorium instruct others in its prevention.

This educative function of the sanatorium should properly include the instruction of the medical profession. There is in our state sanatoria a magnificently neglected opportunity for physicians to perfect themselves in the diagnosis and care of pulmonary tuberculosis. An abundance of clinical material, well equipped laboratory facilities, a hearty invitation to physicians and a cordial welcome on the part of our medical staffs have not served, save in rare instances, to overcome their reluctance to travel a few miles out of the beaten paths or the instinctive dislike of things tubercular which extends even to the medical profession itself. This opportunity is freely offered to the medical profession. It is seldom improved.

The third function, the care of advanced cases, is fulfilled by the provision of proper medical care for such cases and by making their last months and days as comfortable as possible. These are the open, active cases, many of them alternately ambulatory and bed cases for long periods of time, which are dangerous to the health of their homes and communities unless they can be cared for in a state sanatorium, a municipal tuberculosis hospital, or in their own homes under proper and competent guidance which is often impossible and oftener impracticable.

In the performance of this function the sanatorium is handicapped by the fact already mentioned of the difficulty in keeping advanced cases in a state sanatorium, far from their homes, when they find that they are gliding down hill physically. This desire to return home plus the fact that many cities and towns have no adequate facilities for the reception and care of such cases results in the return of these patients to their homes where in many instances the care afforded to the patient and the protection rendered to his family are neither adequate nor satisfactory. Thus in a measure this function of the sanatorium is defeated and the State has wasted time and money on such patients to the detriment of more favorable cases who have been kept out of the sanatorium because the beds were filled.

Still again we have to deal with that class of dangerous consumptives who have been styled the "incorrigible," the "unteachable" the "wilfully careless" consumptives. These often appear to care for no one but themselves and sometimes not even for themselves. These are they who through ignorance, wilfulness or just sheer "cussedness" neglect or refuse to take any necessary precaution, who wilfully and flagrantly violate the spirit and the letter of all sanatorium laws and rules and of similar laws in their own communities and homes, who through the abuse of alcohol or otherwise, even in the sanatorium, deliberately offset any physical good that the sanatorium can possibly offer to them. These are thirty-third degree members of the "Hospital" class. What of them? We cannot hold them in the face of their violation of our rules; we have to discharge them; usually we are glad to see them go. And yet of all consumptives they are the greatest menace to the public health. They drift from one sanatorium to another until the doors of all have been closed to them because of their own faults and mis-behaviour. No law, or at least none so plainly written that the average local board of health dares to enforce it, exists for the compulsory isolation of this type of patient. The legislature in its wisdom has repeatedly refused to pass such a salutary measure and yet without it much of the effort of the Commonwealth in the tuberculosis problem inevitably comes to naught. Furthermore, there is no place in which these patients may be so isolated. The sanatorium cannot hold a patient against his will. We have no option in the matter. So we find ourselves and you in your communities find yourselves with no real remedy against this very real and dangerous phase of the problem. Under existing conditions money expended on these individuals is thrown away. It is patients of this class who make the life of the superintendent of a sanatorium anything but a bed of roses. The very patients of all patients who ought to be held we are obliged to discharge back in their communities in order to preserve sanatorium order, decency and discipline.

Now is all this worth while? Does the Commonwealth receive an adequate return for its expenditures? Is sanatorium treatment worth while?

How shall we estimate the results except by the number of persons restored to health and earning capacity who return to their communities fit to resume their positions as productive members of the body politic; and by the educative influence which they exert upon those communities; and by the number of foci of disease removed from homes and communities.

With numerical statements I shall not bore or confuse you. We have them, however, and they bear out in every way the statement that the results do justify the expenditure of the large sums necessary to maintain and continue state sanatoria in Massachusetts.

In a paper appearing in the Boston Medical and Surgical Journal under date of March 19, 1914, and the caption "Is Sanatorium Treatment Worth While?" Miss Gertrude L. Farmer of the Social Service Department of the Massachusetts General Hospital studied the results of sending 419 patients who appeared at that department to the state sanatoria. Her conclusions, in part, somewhat changed as to wording but not in spirit or intent, follow:

"Owing to the limited number of beds provided in the Commonwealth for the care of its consumptives it is apparent that the State Sanatoria have so far played a relatively small part in caring for individuals. Their educative value cannot be computed. The discharged patients have carried the gospel of hygienic living to thousands. The day seems far distant when state care for the phthisical patient will be so organized that private societies can withdraw from the field. Only in few, if any, localities is municipal work able to fill the gap."

The gradual and continuous establishment of municipal hospitals and dispensaries, the beds in which already total almost 1500, will as time goes on slowly relieve the strain upon the state sanatoria and in a measure will fill the gap to which Miss Farmer alludes. Nor should we overlook the value of the work which has been done by the follow-up nurse employed by the Trustees of Hospitals for Consumptives in relation to patients discharged from the sanatoria.

Many have been restored to permanent, full time earning capacity; many have been restored permanently to part time working capacity; many others to temporary working capacity in full or in part; many others have been enabled to prolong their days on earth even if unable to resume productive labor; still again the last days of many more have been made comfortable and pleasant. The benefit to community health by the removal of inherently dangerous foci of disease through their isolation in state sanatoria cannot be adequately estimated although it must be great.

It is true that many cases upon returning to their homes fail to hold the gain which they made at the sanatorium; it is true that many are obliged to return to the sanatorium a second or even a third time; it is true that in the case of "incorrigibles" most of our time, effort and money is wasted. On the other hand it is also true that many of these physical lapses are the direct result of improper home conditions, or of unhygienic surroundings in places of employment, or in the majority of instances, of the faulty spirit of the patient himself in neglecting to carry out at home the principles of treatment which he learned at the sanatorium. The sanatorium is not willing to assume the responsibility for such lapses under such conditions nor should they be charged against its account in the determination of its real value.

Beyond question restoration to health and working capacity is of great value and likewise is the removal of foci of dangerous disease but, it seems to me, beyond both of these is the importance of the key-note which Miss Farmer sounded, that discharged patients have carried and continue to carry to unknown thousands the gospel of the method of prevention of the spread of this most pitiful disease.

These three benefits bestowed by the sanatorium constitute the state's recompense for its expenditures and warrant the continuance of its efforts to relieve the burden of tuberculosis in this Commonwealth in spite of the fact, that cannot be denied, that the money, time and effort expended upon the "tramp," "malicious" and "incorrigible" types of patients, who obtain entrance to the sanatorium and pull down its standards, are absolutely wasted, which will assuredly continue to hold true until some other provision is made for such types.

◆

Original Articles.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.*

BY BAYARD T. CRANE, M.D., RUTLAND, MASS.

DIAGNOSIS.

IT was no less an authority than Sir William Osler who said that the family physician is a most important factor in the eradication of tuberculosis since he is the first to be consulted when illness arises.

This fact will stand extremely strong emphasis. In fact, is there a more important single principle in the entire tuberculosis situation today? In the future, compulsory examinations of a large part of the public may be adopted—examination of pupils, students, teachers, factory employees, club and lodge members, city, state and national employees—whereby the responsibility for recognition of this disease may be placed upon special agents chosen for this work, but until this or some other innovation is adopted, the indisputable fact remains that in this country the family physician, whether he wishes it or not, whether he realizes it or not, stands almost alone in the front rank, opposing the onslaught of this disease. Surely this is no light responsibility!

The profession in this State has improved in ability to diagnose early tuberculosis since the establishment of public sanatoria, albeit errors in diagnosis and delays in diagnosis are still rampant. Upward of four thousand (4000) persons die annually in this State of this disease and it is not proper to fail to realize that some of these deaths are due directly to the errors and delays in diagnosis.

The general practitioner is in an unenviable position—in fact he is, in my opinion, in an irrational position in that it is his expected task so to watch over the populace that he shall detect this disease (and that always early), freeing humanity thereby of its most dread scourge, *but* he must do this by means of the bare diagnostic powers acquired during a general medical education.

We will not deny that the profession has made great advances in scientific accuracy in many lines, nor that it has many glorious conquests to its credit, all within recent years, nor will we deny a great adaptability and tolerance to changing conditions, but we can not justly expect the general practitioner to acquire and display expert medical knowledge in all branches of his activities, nor can he be expected to display refined diagnostic skill in branches which were not appropriately taught him in his student days and in which, since graduation, he has not had the necessary opportunities to perfect himself.

It seems to me that those who have "berated the general practitioner in season and out of season for his dereliction" have been too optimistic about the ease of acquiring the necessary skill to detect early tuberculosis, forgetting that they themselves spent months, and more usually years, in intimate contact with the disease before they unlearned the mis-conceptions they had previously acquired and before they considered themselves dependable to make an early diagnosis. Are we not, in short, straining for the impracticable and perhaps unattainable when we attempt to train the general practitioner, with his multiform duties, invariably to detect early tuberculosis?

I take it that it is hardly necessary to reiterate the profound advantages in material economy, and in human happiness, which result from early detection of this disease in comparison to detection in its later stages. I will merely state that seven times better results are obtained in incipient cases than in the far advanced cases, and four times better results are obtained in incipient cases than in the moderately advanced cases. It may be properly asked, "By what means, then, other than by the general practitioner, may the general detection of early tuberculosis be made?"

The reply is that no means yet employed can guarantee at once such general, invariable detection, but in some way specially trained physicians must come into intimate contact with the masses. As it is now in this country, examinations are made only with the voluntary consent of the examined and, in the case of the illiterate and uneducated classes, the cause of delays in diagnosis are largely due to this same illiteracy, lack of education and attendant poverty. By some method, then, it would seem necessary to make skilled routine examination compulsory among the illiterate and uneducated classes at least. This suggestion opens up a tremendous field for the operation of ingenuity, influence, and aggressive work on the part of the enlightened medical profession. Massachusetts, to hold its prestige, must hasten to take this advanced view.

Lastly, the general medical public must acknowledge that modern tuberculosis has created a new order of things and that old principles are not comprehensive enough now.

---

* Read at a meeting of the Worcester District Medical Society held December, 1914.

The eradication of this social scourge must depend, as far as the profession is concerned, upon early detection *at any cost,* and then upon an insistent, aggressive mastery and thorough control of the patient, also *at any cost,* until he is wholly well or at least until perfectly trained as to his responsibilities and power of infecting others.

To carry out these requirements, the medical profession must possess courage, insight, industry, and at times, self-sacrifice.

Hazy doubts in diagnosis should be cleared away promptly by consultations, and if a complete control of the patient is not possible at home, he must be sent away where sufficient control can be had.

What are the causes of failure to detect tuberculosis?

They are the same cases that have existed from the outset, though it is undoubted that they are gradually diminishing. They still consist of

(1) Delays in making diagnosis, and
(2) Errors in Diagnosis.

DELAYS IN DIAGNOSIS UNTIL THE DISEASE HAS PASSED BEYOND THE EARLY STAGES.

The delays arise most often, I believe, from inability to detect the slight changes from the normal in physical signs and symptoms, but they also arise from a failure to apply the findings to their logical place. It is a case of the absence of a clear, accurate mental picture of tuberculosis in its outset. To be able to detect early tuberculosis requires a talented use of the stethoscope, a keen ear, and a power to discriminate between the normal and a slight variation from the normal in many bodily functions.

It is difficult to make general interpretations on this subject, but it is justifiable to state that there still seems to be an adherence to the older traditions and teachings about "Consumption" that existed before sanatoria were established, and we continue to make our diagnoses on such clinical symptoms as correspond and co-exist in the types of tubercular lesions which we had pointed out to us in our student days. In those days tuberculosis was taught chiefly in the pathological and post-mortem departments. The clinical histories that corresponded with those cases so often mentioned high temperatures, emaciation, hectic flush, profuse expectoration, night sweats, and cavities that *now* our minds are too prone to cling to those symptoms as belonging to all cases of tuberculosis.

But such is radically erroneous. Our early favorable cases usually present not one of these symptoms. These symptoms arise usually as the lung begins to break down and are generally indications of a late stage or of an acute process.

Truly incipient cases have "slight infiltration limited to the apex of one or both lungs, or a small part of one lobe; slight or no constitutional symptoms (including particularly gastric or intestinal disturbance or rapid loss of weight), slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours; expectoration small in amount or absent; tubercle bacilli may be present or absent and there are no tuberculous complications."*

Another cause of delay in diagnosis is the tendency to lean upon the laboratory report, assuming that a positive sputum report is essential. Speaking at random, far less than one quarter of the cases admitted to sanatoria require a diagnostic sputum test, because the clinical history and physical signs are sufficient generally in the hands of an experienced tuberculosis practitioner to make the diagnosis.

It seems puerile at this date to reiterate that the patient's clothing should be removed to the waist during examination and that each spot should be ausculted after a forced cough followed by full inspiration and expiration.

Among the gross, more readily elicited diagnostic signs, occurring in many favorable cases but rarely in the really incipient, is a lack of expansion on the affected side. To elicit this, the patient should be exposed directly in front of a single source of bright light and asked to take a full breath while sitting or standing with hands in the lap and knees not crossed.

The excursion of the angle of the scapula and of the nipple on the affected side will be often appreciably diminished. This sign is not to be depended upon except to suggest or corroborate tuberculosis, and naturally is not as marked in early as in later stages.

Another comparatively easily elicited sign is an increase of intensity of the respiratory murmur over the affected area. A still more accurate gross sign is the more high pitched or intense whispered voice over the affected area.

The use of hypodermic tuberculine for diagnosis should not be undertaken by one who has not the ability to make a skilled physical examination.

ERRORS IN DIAGNOSIS.

The commonest errors of diagnosis are Bronchitis, Pleurisy, "Grippe," "Bleeding from the throat" and "Debility." In regard to the first (perhaps the most common) I would advise one invariably to be skeptical of the diagnosis of a benign bronchitis, and more especially, to assume that unilateral "bronchitis" is tuberculosis.

"Pleurisy" in most cases accompanies parenchymatous involvement or is an independent tuberculous process.

So-called "Grippe" frequently ushers in frank tuberculosis, and "bleeding from the throat" is so nearly invariably due to tuberculosis that the invariable first assumption should be tuberculosis. It may appear as mere specks, as a diffused pinkish discoloration of a small mass of sputum, as a few bright streaks in the sputum, or as a chocolate colored or blackish, mottled mixture. These small blood spittings are often a most fortunate episode in the case as they are quite apt to disturb the patient sufficiently to rouse him to see a physician.

---

* *Vide:* Classification adopted by the National Association for the Study and Prevention of Tuberculosis and by the American Sanatorium Association.

Some of the more rare symptoms of pulmonary tuberculosis are dyspnea, mental irritability, languor and weariness. Psychasthenia often develops as tuberculosis appears. I would urge a sharp lookout for this condition, more particularly in women, so that such treatment as may be instituted will be in harmony with this condition and so that the patient's comfort will be most fully protected. The psychasthenia may take the form of fears, apprehensions, depressions, or hallucinations, and in these cases isolation and bed treatment, individualization and an harmonious environment will be very valuable.

TREATMENT.

It may be well to take a general review of events as they have occurred in the tuberculosis field (chiefly in this state), calling attention to progress and failure so that we may the more wisely deal with the problems of the future.

In 1885, Dr. Edward L. Trudeau established the Adirondack Cottage Sanitarium, thereby introducing sanatorium treatment into this country. The modern kind of tuberculosis activities in this country may be said to have begun there and then. This noble man was a worthy sponsor of a great cause.

In establishing his institution in the mountains, he adopted the theory of the beneficial effects of altitude and of inland climate in the treatment.

In February, 1891, Dr. Vincent Y. Bowditch established a sanatorium in Sharon, Mass., at a general elevation of about 300 feet, and achieved remarkable success. Influenced chiefly by this success, the State of Massachusetts elected to try the experiment of treating favorable cases of tuberculosis under its own supervision. It chose a site at an elevation of about 1200 feet in Rutland and appointed Dr. Bowditch and others to its medical staff.

This State Sanatorium, doing pioneer work, achieved such success and popularity that a country-wide policy of establishing State Sanatoria soon followed.

But after a few years of effective operation, outside words of criticism and disappointment were heard. The criticism was aimed at the incompleteness of the benefit received, or, in other words, to the tendency to relapse which some patients showed after discharge from the sanatorium, and incidentally the climate and altitude and other things took their share of criticism. The criticism accumulated and finally assumed the proportion of definite counteracting and corrective propaganda.

Home treatment, even in crowded cities, in congested quarters was enthusiastically hailed. *Day camps* were established in many large cities, regardless of altitude and climatic conditions. *Tuberculosis classes* were instituted in Boston and adopted in many large cities of other states. *Tuberculosis dispensaries* took on new expansions. Even the State Tuberculosis Commission, then reorganized, showed the existing discontent at sanatorium results as realized at Rutland by using considerable pressure to utilize the then-building three new state institutions for the reception and treatment of favorable cases on a par with Rutland, though these institutions had been located with slight regard to climatic advantages, but chiefly so that they might be near populous districts.

At about the same time, to one who had followed the trend of the annual meetings of the National Association for Study and Prevention of Tuberculosis from the outset, a lull of enthusiasm became apparent in its meetings.

All these conditions were tending to establish a real belief that sanatorium treatment was not as valuable as it had been claimed by the originators and that non-institutional treatment was as good, and that all climates and all kinds of climate were equally valuable in curing tuberculosis. This belief prevailed for several years. Since then, however, class treatment has been largely abandoned, day camps have fallen from grace somewhat and some, who had enthusiastically endorsed home treatment, have since become equally enthusiastic over the great curative power of the bracing, clear air of hills and mountains.

These facts are significant and can all be explained readily. The corrective propaganda were tried out and found less capable of producing results than sanatoria had been.

It is today to be noticed wherever experienced tuberculosis workers of all kinds gather (social workers, district nurses, dispensary physicians, city physicians, clinicians and sanatorium workers) that there is a prevailing general conviction *that patients should first go to a sanatorium* because of the better chance of cure there obtained and because of the more thorough health education there received. In other words, *good sanatoria were never so popular as today*. Stated in other terms, it is now recognized quite generally among tuberculosis workers, after impartial trial of various agencies, that sanatoria are fixtures as long as tuberculosis exists, and that in the great preponderating majority of cases, those patients are far more fortunate who can have the advantages, during a part of their treatment at least, of a good sanatorium. Before long the same conviction may be expected to take possession of the profession at large, and coincidently, I venture to say, will the tuberculosis death-rate show a more rapid decline.

It is not easy to explain convincingly the reasons why institutional treatment produces better results than home treatment, yet an analysis of the individuality of the disease will reveal some peculiarities which certainly would suggest the probability that institutional treatment would be preferable.

1. For instance, the disease is *subtle* and *insidious and* is not accompanied with marked bodily distress. Hence the patient is apt to overlook a backsliding in his health until it has become marked and serious, but if he is in an institution he is under the frequent observation of nurses or physicians who are trained to detect slight variations of symptoms.

2. *Regularity of routine* seems to be a valuable element of treatment and it is quite apparent that a home can rarely be systematized to operate with the precision of an institution.

3. There is a large element of *effort* and *task* about the treatment when properly pursued. It is apparent that with the family at hand, the patient may be often excused from the effort when an institution would insist upon it.

4. At home the patient is bound to be brought in contact with *petty cares* and *annoyances* of which he would probably be ignorant if he were away.

5. The treatment is a *tedious, long continued* process, during which the fund of moral support, wise counsel and patience of a family may give out.

6. The treatment is *progressive* and requires frequent alterations of orders by the physician, but if at home the patient, when feeling well, is apt to consider a visit from the physician as an unnecessary expense.

7. *Education about the disease* by observation of other patients is to be had in an institution and not when taking treatment alone.

These are some of the reasons of preference for sanatoria. In a small percentage of cases, temperament is such that institutional treatment must not be thought of.

Sanatoria, then, stand as the chief means of treatment of the disease, and yet it is all too apparent that sanatoria can never eradicate the disease alone. All the combined methods of attack upon the disease, including better housing, cleaner cities, public parks, pure water supply, open air schools, out-door sleeping, shortened hours of labor, cleaner milk, hospitals for incurables, fumigation of apartments, prohibition of spitting, etc., etc., have made a strong impression, but apparently the greater part of the task still remains undone.

To return to the subject of the sanatorium patient, I would reiterate that the extent of control of his disease on his discharge (with consent) is limited to an *arrest* but not a cure. The sanatorium at best has subdued, but not eradicated his disease and has educated him into better methods of living, but the purely sanatorium duty stops there. What happens to him after discharge cannot rightly be the responsibility of the sanatorium.

In many cases the disease relapses after discharge. *The after-care of the consumptive is the weakest point in our whole scheme today* and little has been accomplished to improve this defect.

Shall the patients who came from unsanitary homes and whose previous work is now unsuitable for them, be sent to work colonies, supported by the state, for physical training to fit them for the requirements of the general labor market and for manual training in more healthful occupations?

Until some comprehensive solution of the after-care problem is made, it is well to keep in mind that arrested and non-arrested cases are returning into our midst with need for wise medical counsel.

The treatment of a curable case of tuberculosis may be divided into two distinct stages:

In the first we must create and maintain such a form of living by the patient as will build up a controlling resistance to the tubercular toxine and establish a normal degree of nourishment, by means of such a readjustment of his habits and of the actions of the leading organs of his body as will maintain the toxine resistance and normal nourishment even under moderate activity. When this is accomplished the disease is arrested. In practice this will require an aggressive, alert, patient, optimistic resourceful. skilful action on the physician's part. This may well be called the sanatorium phase of the treatment and is well comprehended and indicated in the word "*sanatorium,*" which comes from the verb "*sanare,*" to heal.

The second stage of treatment is quite different. It is planned on the principle to hold ground already gained until cure is established or arrives. It is less aggressive than the first phase and is more accurately a problem of *prophylaxis.* Its chief aim is not to improve on what has already been accomplished in improved habits and bodily functions, but to prevent the reappearance and re-establishment of any form of bodily overtax.

The first stage will require of the physician ability to note and interpret the changing physical signs and symptoms, and a knowledge of the influence of rest and exercise upon the pathological process, a knowledge of foods and of the action of air upon the body.

The second stage will more particularly require a knowledge of the normal in housing, hours of work, sanitary conditions and food, and incidentally will reveal the fact that society, though partly responsible for the patient's illness, yet adheres to such prejudices against him that he faces severe restrictions and finds few avenues for the use of his talents.

The one who assists in this prophylaxis of tuberculosis must do his part then in social uplift work, but so intertwined is tuberculosis with all the great human problems, of the individual and of the community, that changes of great magnitude, entailing colossal outlay of money and effort, must doubtless be wrought before this scourge shall be cast off.

Consider alone the outlay necessary to bring housing conditions up to a healthful point in our cities. More than almost any other disease tuberculosis possesses social phases, and the physician who comes into even occasional contact with it may well pause to consider whether in his handling of a case the obligations to society are properly considered. We have the opportunities and abilities to see clearly the basic causes of this far-reaching scourge. Our position has enabled us to trace out the human faults and deficiencies that produce the thing. No other profession, no other group of people, knows so well when humanity begins, by its omissions and commissions, to endanger itself with this trouble. Ours being the first eyes to see the impending misfortune, so also is ours the duty to warn early against the dangers,—to counsel in private and public the truths we know, to teach, to preach, to educate,—to create, in short, public enlightenment.

Let the profession realize that the pioneer tuberculosis physicians have known well what they needed in state institutions to make success, but that they must wait for the consent of legislative bodies. Let us realize that slow progress can often be traced to bad politics and we will see clearly what the remedy is.

Help to disseminate the information that able physicians often shun public institutions because of the dangers and futile obstacles therein.

Able hospital superintendents deserve coöperation and support from the profession. The percentage of recoveries being dependent greatly upon a complete authority and control of patients, it follows that coöperation by the profession with the hospital staff will assist to increase recoveries by establishing confidence and coöperation between patients and staff. We should attempt to aid the staff to have untrammeled authority and power.

Let us have a policy in regard to our city and county tuberculosis hospitals. These are chiefly isolation places, and the management will require chiefly palliative measures until the end. But some curable cases may enter here, and for them an aggressive, particular routine must be instituted or they may fail to recover.

◆

MORTALITY AFTER PROSTATECTOMY, BASED ON A STUDY OF 229 FATAL RESULTS.*

BY BENJAMIN TENNEY, M.D., BOSTON,
AND
HENRY M. CHASE, M.D., BOSTON.

The observations which this paper presents are obtained from the consideration of 106 fatal cases following prostatectomy contributed for our study by members of the American Urological Society, from other cases already in print and from a paper on Mortality after Prostatectomy published by us in 1906.

As many of the reports cover cases dying before our modern methods of investigation became common and others have been made up from incomplete records, the totals of the different observations vary. It may be regretted that this paper does not cover the percentage of recoveries as well. Possibly this may be taken up at another time, but this paper will be confined to a study of fatal cases and their relation to the conditions which existed before operation.

We have discarded the reports on cases operated under fifty years of age as likely to be complicated by acute infection of the urinary tract and by cancer. One hundred and sixty cases arranged by decades with the cause of death appear in Table I.

Table I

	50–59	60–69	70–79	80–89	90	Totals	Cases from Previous Paper	Totals	
Uremia	7	15	16	3		41	25	66	30%
Sepsis	1	9	8	1		19	6	25	11%
Hemorrhage	3	10	13	4		30	11	50	22%
Shock	1	3	5			9			
Embolism	3	12	7	2		24	3	27	12%
Pulmonary	1	3	5	4	1	14	8	22	10%
Cardiac	1	4	6	1		12	9	21	9%
General Debility		3	2	1		6	1	7	3%
Acidosis		1	1			2	0	2	1%
Accident	1	2				3	6	9	4%

It appears that there were more deaths from uremia than from any other one cause. We have listed the deaths from sepsis next because some deaths assigned to this cause occurred so early as to suggest the influence of renal inadequacy in producing so early fatal results. Legueu goes even further and in a recent paper says: "Minute investigation of the conditions under which prostatic patients die compels us to attach more and more importance to renal insufficiency. Death from uremia fully explains the accidents currently ascribed to embolism or pulmonary complications which in reality only play a secondary part. It would seem that alongside and vastly more than the liver, lung and heart it is the kidneys which most frequently kill our patients after operation and which furnish the underlying cause of many of the pathological troubles in those who recover."

The next most frequent cause of death is hemorrhage and we have listed shock after this because the two are so often associated and because some patients who were said to have died of shock lived for twenty-four hours or more before the end came.

It is our opinion that a reduction in mortality from these two causes is possible and that a distinct improvement over the results of ten years ago is already here.

---

* Read at the annual meeting of the American Urological Association in Philadelphia, 1914.

The large number of deaths between sixty and eighty corresponds with the larger number of patients who were operated in these decades. Our previous paper, based on 816 operations by many different surgeons, showed that 80% of all prostatectomies were done on patients in these two decades. It may be interesting to reproduce the table from that paper showing the mortality in the different decades.

= TABLE II =

	50–59	60–69	70–79	80–89	90
Number of Patients	120	422	240	24	2
Percentage of Fatal Operations	5.8%	9.5%	15%	33%	50%

This table was made up from ninety-one fatal results in the work of many different operators with a general mortality of ten per cent.

DURATION OF OBSTRUCTION.

There are 100 cases in which the duration of obstruction can be compared with the cause of death.

Table III

	Duration of obstruction up to one year	One to three years	Over Three years.
Uremia	9	5	15
Sepsis	5	1	4
Hemorrhage	5	7	13-
Shock			
Embolism	5	2	7
Pulmonary	0	6	3
Cardiac	1	1	6
General Debility	0	1	2
Accident	0	2	0
Total	25	25	50

The larger proportion of deaths from uremia, sepsis and embolism in patients operated within a year of obstruction, suggests that patients with impaired renal and circulatory apparatus are more likely to seek help early than those who have no disabilities outside of the bladder.

PREPARATION UNDER HOSPITAL CONDITIONS.

There are 101 cases in which the preparation under hospital conditions can be compared with the cause of death.

TABLE IV

PREPARATION

Cause of Death	Two days or less 44 cases	3–7 Days 30 cases	8–14 Days 20 cases	Longer 10 cases
Uremia	16 = 37%	9 = 30%	5 = 25%	3=
Sepsis	6 = 14%		3 = 15%	1
Hemorrhage	7 = 16%	8 = 27%	4 = 20%	1
Shock		1 = 3%		
Embolism	9 = 20%	3 = 10%	5 = 25%	1
Pulmonary	1	3 = 10%	2	
Cardiac	3 =	3 = 10%	1	4
General Debility	1			
Acidosis				
Accident	1			

The diminishing percentage of deaths from uremia, as we compare the immediate operations with those delayed is certainly suggestive of the desirability of preparation before operation.

Along this same line it appears in Dr. Hugh H. Young's monograph of 1906 that while some few of his patients were operated within a day or two of admission, there was an average delay of more than eighteen days. You will remember that he reported seven deaths in a total of one hundred and forty-five cases.

PRELIMINARY DRAINAGE.

Thirty-six of these fatal cases were drained by catheter and ten by cystotomy before the prostatectomy. Drainage varied from one to ninety days. Fifteen were drained less than one week.

= TABLE V =

Preliminary Drainage

	Catheter Drainage Cases	Cystotomy
Uremia	10	5
Sepsis	3	1
Hemorrhage	8	1
Shock	2	
Embolism	7	1
Pulmonary	4	1
Cardiac	1	1
General Debility		
Acidosis		
Accident	1	

These cases show nothing except that the drainage used was not adequate to protect them from the usual proportion of deaths from uremia, hemorrhage and embolism. It is a question whether drainage for less than a week makes any material difference in the condition of the bladder and kidneys.

If we are to drain before operation we should do it for a certain effect rather than for a certain number of days. If there is any reason for using drainage in preparation of patients that reason should be removed before drainage is given up. The replies to our question are too few to show anything as to the comparative value of long and short preliminary drainage.

FUNCTIONAL TESTS.

The results of functional tests are reported in twenty-six fatalities.

= TABLE VI =

	Cases with Functional Tests	General Percentage
Uremia	19%	30%
Shock and Hemorrhage	19%	22%
Embolism	23%	12%
Sepsis	4%	11%

The functional tests reported are phenolsulphonephthalein and urea percentage, the latter in two cases only.

We regret that the number of fatal cases in which some adequate test of renal function was made is so small as to be no test of the value of any of these recent methods. It does appear, however, that the percentage of deaths from uremia and sepsis is smaller among cases tested than among the general run of cases. We believe that the rapidity with which the phenolsulphonephthalein appears in the urine is of great value in estimating the progress made by a patient during his days of preparation. The new ferment which makes the estimation of urea in the blood and urine comparatively easy will doubtless bring the "uremic constant" into frequent use on this side of the ocean. No report of its use has come among these cases.

The hemoglobin test is reported in eighteen cases only. Four having hemoglobin of 80% or better died of hemorrhage; six with hemoglobin, between 70% and 80%, of uremia; four with hemoglobin of 80% or better died of embolism.

The blood pressure is given in thirty-one cases. Of those with pressure of 200 or over two died of uremia, one of hemorrhage and one of sepsis. Of those with pressure of 140 or below three died of hemorrhage, one of embolism and one of cardiac disease.

The presence of edema is mentioned in only four cases.

In nearly all the cases dying of hemorrhage the mental condition is given as "Good" or "Fair." In the cases dying of uremia the mental condition is given as "Good" or "Impaired."

The effect of "clean bladder" in twenty-six cases is not apparent, one case dying of sepsis which is not far from the general proportion.

ANESTHESIA.

The anesthesia is reported in 106 cases.

Table VII

= Anaesthesia =

	Ether	Spinal	Nitrous Oxide	Chloro-form	Local	Gas Ether Chloro-form
Uremia	15	6	4	6	2	
Sepsis	4	1				
Hemorrhage	14	1				1
Shock	5					
Embolism	17	1			1	
Pulmonary	5	1	4		1	
Cardiac	3	2	1	1		
General Debility	2	2	1	1		
Acidosis			1			
Accident	2					

The proportion of deaths from uremia under chloroform and spinal anesthesia is larger than with the other anesthetics which may or may not be due to using these in the worst cases. Certainly neither anesthetic gives perfect security against death from this cause.

The causes of death as related to the type of operation appear in the following table.

Eleven fatalities following the two stage suprapubic operation, and seventeen following the transcapsular perineal operation are included in the above tables as both show the usual causes of death and do not materially alter the above figures. If we may regard the deaths from uremia, sepsis, shock and hemorrhage as being more likely preventable than those from other causes, it is worth noting that 48% of the deaths following the suprapubic route were from these causes, which may be compared with 72% in the perineal fatalities.

TABLE VIII

	Suprapubic	Perineal
Uremia	18 = 22%	19 = 31%
Sepsis	4 = 5%	8 = 13%
Hemorrhage and Shock	16 = 21%	17 = 28%
Embolism	15 = 20%	7 = 11%
Pulmonary	9 = 12%	6 = 10%
Cardiac	8 = 10%	2 = 3%
General Debility	4 = 5%	
Acidosis		1
Accident	2	

GENERAL CONSIDERATIONS.

The three cases dying of accident were one from embolism following air distention of the bladder, one of sudden death with ether anesthesia while the patient was in the Trendelenburg position, and one from distention of the abdominal cavity by irrigating fluid used after the operation.

Under the heading of general debility we have included one case said to have died from acute dilation of stomach.

COMMENTS.

"I am satisfied that air absorbed through the bladder walls or through a prostatic lesion was the cause of this man's death. I will never use air distention again."

"It is my opinion that the pressure of the perineal drainage tube on the purulent open vein field of the prostatic urethra forced the pus with blood clot into the veins on getting the patient out of bed, and this was followed by an embolic pneumonia and death."

"This patient was operated in a town nearby. I left the day after operation. I have since made it a rule never to operate away from home save in emergency."

"In talking with the various men doing this kind of work, I find that some insist that they will never operate outside of the hospital. I have seen cases in farm houses where something had to be done for relief immediately and where the suggestion of removal would not be listened to. I question very much whether some one will not have to do certain cases outside the hospitals."

"It is to be noted that I have never lost a private patient. All my deaths have occurred in hospital cases in which I was unable to secure the sort of pre-and-post operative treatment upon which I cannot but think so much depends in the question of death or recovery."

SUMMARY.

The greatest danger in the operation of prostatectomy is death from uremia or from conditions closely associated with it. After examining a patient we should be able to say that he is a good, fair, or poor risk with reference to this condition. If he is not put in the first class, we should try to put him there before operation or at least get him as near there as possible. Three fatalities from uremia reported to us in patients who had been carefully treated for more than two months, show that we cannot always succeed, but the percentage of deaths from uremia among the cases operated within two days was 37%, while the percentage of deaths from the same cause among patients who were observed long enough to have functional tests made was 19%.

The second great danger in this operation is death from hemorrhage and shock. Is it possible that in our desire to avoid shock by doing a rapid operation, we have sometimes produced shock and hemorrhage by doing a needlessly rough operation? There are reasons in the reports sent us for thinking that this may have had some influence. It is fair to say that a patient whose hemorrhage has been thoroughly controlled seldom starts bleeding again unless the gauze or other means of control is removed too soon. Possibly some operators have been disappointed at nature's failure to stop a leaking vessel which they had failed to close before the patient left the table.

The third serious fatality is embolism, which may also be the cause for some pulmonary complications.

How can we avoid at least a portion of this risk?

Blood vessels are necessarily torn and left untied. The wound is in an infected region and constantly bathed in a septic fluid. A larger raw area is left exposed to this contamination than in almost any other operation. Constant irrigation does not prevent embolism. It occurs when perineal, urethral and suprapubic drainage tubes are used and after both operations. Is it possible that our well meant drains are responsible for some of these emboli as suggested by Dr. Barnett?

Suprapubic tubes long enough to rest in the prostatic cavity and perineal drains reaching the same distance are well placed to disturb the clots in the surrounding veins as the patient moves about. Is there any need of tubes after either operation? There will be no back pressure of urine with a good sized opening in the bladder and we would welcome an early closure of the incision we make, provided the patient does not suffer thereby.

The deaths under the heading of Cardiac and General Debility are many of them uncertain. Some with autopsy would have been called uremic and some embolic. Some apparently represent the general giving out of the machine after the accident of prostatectomy and some a myocarditis.

It is not yet possible to say what the mortality of the operation should be because operators have such varied methods in their selection of cases.

A surgeon who believes that every old man suffering from prostatic obstruction is entitled to a chance of operative cure will have a higher mortality than the surgeon who refuses the desperate cases.

One skilful operator says privately that by selecting his cases he has done over ninety prostatectomies with one fatal result, and in contrast there is a mortality in some excellent hospitals of 20% or more. It is certain that the mortality rate is lower than it was ten years ago and a large credit is due Drs. Rowntree and Geraughty's study of color elimination in its relation to renal competency, for the improvement.

Before this work appeared many of us knew the wisdom of preliminary drainage but now we have a measure of the time necessary for this. Until some better method is made applicable, no prostatectomy should be done without testing the capacity of the kidneys for color elimination, using some chemical at least as reliable as phenolsulphonephthalein. By this intelligent delay many cases can be transferred from the desperate to the reasonably safe class of risks and those truly inoperable can obtain some measure of relief from their misery.

A STUDY OF THE EFFICIENCY OF MIXED TOXINS (COLEY) IN INOPERABLE SARCOMA. A CRITICAL ANALYSIS OF 134 MICROSCOPICALLY PROVEN CASES.

BY TORR WAGNER HARMER, M.D., BOSTON,

Assistant in Anatomy, Harvard Medical School; Junior Assistant Surgeon, Children's Hospital; Assistant in Surgery, Massachusetts General Hospital.

(Concluded from page 416.)

CASE REPORTS.

BONE (Not Giant Cell).

CASE 86. (Case No. 41. and *Annals of Surgery*, 1913, vol. lviii.) Periosteal round cell sarcoma of femur with multiple metastases. A. G., 18, male. An extensive growth involving lower two-thirds of shaft of femur proved on microscopical examination to be small round cell sarcoma. Amputation at hip joint refused. After prolonged x-ray treatment, extensive metastases developed in pectoral and ilio-lumbar regions, involving ilium. Pectoral mass partially excised.

Pathological report. Round cell sarcoma. Toxin treatment instituted. In four weeks ilio-lumbar growth became necrotic and was drained. No trace of recurrence 10½ years later. Subsequently there developed epithelioma at site of x-ray dermatitis on chest and malignant tumors (epithelioma and sarcoma) at sight of x-ray dermatitis on thigh. The latter grew rapidly. Amputation was refused. Lung metastases developed and the patient died. Recorded in Group C.

CASE 87 Personal case. Referred by Dr. Conant. Chondro-sarcoma of tibia with metastases. F. McH., an Irish stableman of 26.

Oct. 22, 1912. Gives following history. One and a half years ago growth appeared in right shin, increased to size of grape fruit, and was excised. It recurred within nine weeks, since which time it has been slowly and painlessly growing. Four days ago hemoptysis with pain in right chest. There is a slight dulness at right base with diminished respiration and tender area in posterior axillary line. A large firm mass involving whole leg just below knee, size of child's head, with ulcerated area about four inches in diameter. Markedly enlarged glands in groin.

Oct. 28. Dr. Conant amputated leg at mid-thigh under spinal anesthesia to rid patient of foul mass and prevent hemorrhage.

Pathological report. (1210-142) Dr. Whitney. Chondro-sarcoma. A lower extremity showing a tumor at calf with ulcerated surface. Section shows it infiltrated with muscle and fat, having a reddish-brown surface which in places was bony. Further section shows periosteum of tibia eroded by tumor growth. Section of tibia shows yellow marrow with firm cavity. Fibula not involved. Knee joint free. Enlarged lymph nodes from groin. Microscopical examination shows irregular area of hyaline cartilage, in places, however, with very abundant cells but without any definite type of structure.

Treatment with mixed toxins started three weeks later and continued 3½ months. Maximum dose, 14 minims. Injections every two or three days. Reactions marked. Shortly after treatment started recurrence appeared on anterior surface of stump. This diminished in size but for last month unaffected by toxins. During period of diminution of recurrence there was no cough or pain in chest but three months after starting toxins patient had attack of chest pain with hemoptysis and from this time until treatment discontinued (March 6, 1913) patient steadily declined and recurrence on stump steadily progressed. Recorded in Group B.

CASE 88. (*Annals of Surgery*, Nov., 1914, p. 559.) Inoperable mixed cell sarcoma of clavicle and breast. R. B., male. Mass of two years' duration occupying whole left pectoral and axillary regions. Markedly protuberant and of variable consistency. Just above clavicle growth about size of hen's egg. Toxin treatment for two months with diminution in size and marked softening. Incision for drainage. Soon after toxins were discontinued the growth became rapid. Radium of no avail. Death. Recorded in Group B.

CASE 89. Personal case. Referred by Dr. Scudder. Small round cell sarcoma of tibia. Recurrent. M. B., a school girl of 15. House No. 180922.

Feb. 7, 1912. Three months ago fell wrenching but not striking right knee. Pain in knee persisted and in three weeks a swelling was noted just below the joint, motion became limited, and for past month has been confined to bed. Examination shows diffuse enlargement of right knee, slightly tender, not inflamed, no fluid in joint. X-ray shows typical periosteal sarcoma.

Feb. 10. Amputation at mid-thigh by Dr. Scudder.

Pathological report at time of operation. Small round cell sarcoma (Dr. Whitney).

Subsequent pathological report (122-42.) A leg amputated at thigh. Section in popliteal space shows a dense white tumor size of hen's egg grating under the knife. Microscopical examination of growth shows it to be composed of round cells with a rather homogeneous intercellular substance, in places infiltrated with lime salts, but nowhere with any true bone. Osteoid-sarcoma.

Nine days later toxin treatment started and continued every second or third day for 25 days. Maximum dose, 3 minims. Reactions good. Toxins then refused. Four months later (July 25) seen with recurrence in the stump, a deep mass about 1 by 1½ inches, firm and fixed to deep tissues. X-ray shows periosteal sarcoma.

Toxin treatment resumed and continued one month. Injections every other day into tumor. Reactions sharp. Maximum dose, 16 minims. Although patient was having good reactions the growth was steadily increasing in size and the patient's general condition becoming much poorer. Died three months later (Nov. 18, 1912) of metastatic pneumonia and pleurisy. Recorded in Group A.

CASE 90 Personal case. Referred by Dr. Channing Simmons. Multiple periosteal sarcomata. L. E. S., a Portuguese barber of 19. House records W. S. vol. 637, p. 49 and vol. 671, p. 221.

July 15, 1909. Six months ago noted pain in left leg followed by "thickening of the bone." No known injury. Growth steady with very little pain. Now a hard non-tender fusiform swelling of mid-third of tibia about three times former size. July 16, amputation just below mid-thigh by Dr. Lothrop.

Pathological report. (97-45.) Periosteal sarcoma. Dr. F. C. Kidner. Left leg amputated just above the knee. Symmetrically involving the mid-third of the tibia is a hard, fusiform osteoid tumor rather cellular in appearance. The tumor partially involves the muscle. On section of the bone it is apparent that the growth is invading the medullary cavity. The tissue of the tumor is grayish in color. Microscopical examination shows masses of osteoid tissue with very small amounts of lime deposit and irregular and atypical cells. In the meshes of this badly formed bone lie masses of ovoid irregular cells, whose protoplasm shows many fibrillae extending from cell to cell. The cells are rather large and nuclei dense.

July 23, 1910. Patient reports with history of being well until six months ago when noticed pain and swelling in left shoulder. When shoulder had attained twice normal size pain ceased. For one week considerable pain in right shoulder. This he attributes to use of crutches. There is a fusiform symmetrical enlargement at left shoulder, size of very large grape fruit, extending from deltoid insertion up over acromion and coracoid. Smaller similar mass at inner end of right clavicle.

Treatment with mixed toxins started and continued three months. Injections every second or third day with good reactions. Patient's condition and size of masses about the same. Consistency of masses somewhat softer. Patient then returned to local physician, Dr. E. W. Smith, then of Provincetown, Mass., now of Boston, who continued toxins under my direction for six weeks. Maximum dose, 14 minims. Tumors still increasing in size when toxins omitted.

A letter from Dr. Smith Nov. 25, 1913 states that he believed the condition unaffected by the toxins. The left clavicle became involved and grew with the tumor of the right clavicle to such size that the patient was unable to turn his head. The growth of the humerus attained enormous proportions so that a specially constructed casket was necessary. He died June 12, 1911. Recorded in Group A.

Case 91 Personal case. Referred by Dr. W. J. Mixter. Fibro-sarcoma of spine.

C. J. D., clerk, 43. May 24, 1913. Gives following history. For a year feeling of strain of back. Diagnosed as lumbago. Two months later drawing pain in front of left thigh relieved by lying down. One month ago numbness and severe pain of left leg which has persisted. Upper lumbar region shows stiffness and pain on motion; tenderness to pressure. Slight left scoliosis. No mass. Left knee jerk, absent. Reflexes and sensation otherwise normal.

May 25, 1913. Operation by Dr. Mixter. Laminectomy of first and second lumbar vertebrae, exposed a tough, infiltrating growth involving bone. Impossible to remove wholly.

Pathological report. (135-117) Dr. W. F. Whitney. Fibro-sarcoma with giant cells. A few rather firm, rather grayish fragments with muscle and a little tissue. Microscopical examination shows growth of fibrous tissue, in places quite cellular with rather hyaline fibers and here and there areas of scattered giant cells.

Treatment with toxins started in 12 days and continued for 7½ weeks, injections every other day. Maximum dose, 24 minims. Reaction after first fortnight marked, but mass became evident at operation scar and grew rapidly with development of complete paralysis of both legs. Treatment continued until day before death. Recorded in Group A.

Case 92. Personal case. Referred by Dr. C. L. Scudder. Mixed cell sarcoma of lower jaw. Mrs. W., 32.

For 4½ weeks swelling of jaw accompanied by neuralgia of right side of face and beneath eye. Pain not great. Examination shows a swelling size of apple on outer side of right jaw, extending into mouth, with pus exuding from around teeth in this region. X-ray shows osteomyelitis. Mass is firm in places and in others somewhat fluctuant. Evacuation through incision in mouth. Tissue removed; evidently necrotic malignant disease.

Pathological Report. Sarcoma.

Sept. 9, 1914. Dr. Scudder performed a resection of one-half of lower jaw with removal of mass in mouth. Cervical glands not enlarged. Mouth mucosa sutured tight. Small drain in neck. Patient made a satisfactory convalescence.

Pathological Report (Dr. H. F. Hartwell). Osteoid sarcoma. The tumor of the jaw received on Sept. 9, consisted of a round, irregular mass about the size of a tennis ball. It was firmly attached to a portion of the ramus. On side was a foul necrotic mucous surface. A portion of the bone which was enveloped by the tumor was atrophic and friable. Section of tumor on the surface away from the mucous membrane showed a grayish-white firm substance. Microscopical examination of a number of sections showed a richly cellular tumor made up of large undifferentiated round cells with considerable eosin staining intracellular substance. The nuclei were of large size and showed numerous mitotic figures and occasionally cells were seen containing several nuclei.

Nov. 4 patient seen with Dr. Scudder with recurrence size of crab-apple, firm, bluish-red, extending into floor of mouth. Mixed toxin treatment started following day and continued until Dec. 9 (5 weeks). Patient exhibited but little tolerance for toxins. Maximum dose 4 minims. Reactions always severe. Toxins without effect. Mass grew steadily in size, became quite soft and was early drained through incision in neck. X-ray treatment started. Despite massive doses every second or third day patient became progressively weaker and died Jan. 16, 1915. Recorded in Group A.

Case 93. Personal Case. Referred by Dr. C. A. Porter. Spindle cell sarcoma of clavicle. M. A., Jewish printer of 20. House No. 171855.

Oct. 12, 1910. Admitted with history of small lump noted 5 years previously above right clavicle, which has grown steadily in size. Rather pale youth with tumor size of small orange above the sternal half of right clavicle and apparently slightly attached to same. The mass is not tender, not adherent to skin, and of firm consistency.

Aug. 13, Dr. Porter shelled out a tumor which was adherent to clavicle. Anterior half of sternal end of clavicle chiselled off.

Pathological Report. (108-56) Dr. F. C. Kidner. Spindle cell sarcoma.

Feb. 9, 1911. Readmitted with tumor size of a walnut adherent to mid-clavicle. Excision of clavicle refused.

June 9, 1911. Readmitted. Mass now size of peach. June 10, Dr. Porter did a partial excision.

Pathological Report. (116-45) Dr. H. F. Hartwell. Fibro-sarcoma.

Nov. 14, 1911. Readmitted. Has had x-ray treatment for over three months. Despite this the tumor is now size of a large grapefruit, involving clavicle, tense, red and ulcerated. Nov. 18, interscapulothoracic amputation by Dr. Porter. The entire mass could not be removed. The apex of the lung already involved.

Dec. 10. Mixed toxin treatment started with injections into a mass about the size of an egg. Continued for one month without apparent effect. Maximum dose, 5 minims. Reactions moderate. Patient died April, 1912. Recorded in Group A.

Case 94. Personal Case. Referred by Dr. Porter. Giant cell sarcoma of spine (recurrent). A. J. M., boy of 16. House Records, orthopedic, vol. xx, pp. 67; W. S. vol. 761, p. 161.

June 10, 1912. Admitted to hospital with following story: Fell three months ago, striking spine. Pain and tenderness have persisted in this region ever since and for two weeks numbness over external and anterior surface of right thigh with absolute loss of sensation.

Patient walks with slight instability, complaining of weakness of right knee, steps with great care, the slightest jar causing excruciating pain in lower dorsal region of spine, shooting up to head. Slight depression in region of tenth dorsal spine with swelling about the size of hand in posterior subcostal region. Both legs may be raised over about one-third normal arc, beyond which pain in the back and to right side of spine. Ankle clonus and Oppenheim sign on right. Area of analgesia over external aspect of right thigh just below trochanter. X-ray negative.

June 21, 1912. Nerve consultant (Dr. Baldwin) finds double ankle clonus and Oppenheim with disappearance of tactile and pain sense over right anterior crural distribution. Diagnosis, partial paresis of traumatic origin.

June 22, 1912. Swelling of back appeared fluctuant but aspirating needle revealed nothing.

June 26, 1912. Operation. Dr. Porter. Ether. Bluish colored, rather tense, fluctuant mass exposed beneath muscles of back; incised with escape of quantity of dirty liquid which was found to be encapsulated in rather definite sac with thickened broken-down tissue in walls. Vertebrae involved. Curetted out and during operation Dr. Wright reported giant cell sarcoma. Transverse process removed, bone curetted, capsule trimmed as much as possible. Bleeding profuse. Cavity tightly packed. Patient put to bed in very poor condition but recuperated rapidly.

Pathological Report (126-126), Dr. Hartwell. Giant cell sarcoma. "Specimen consists of soft irregular pieces of tissue. Microscopical examination shows richly cellular tumor composed of spindle cells with numerous giant cells. The cells are very atypical and their richness varies in different areas of the tumor, some places being quite fibrous. There are scattered necrotic areas in the tumor tissue."

Treatment with mixed toxins started at once and continued until Jan. 29, 1913, seven months. Injections every other day and then twice a week. Maximum dose, 18 minims. Reactions usually severe. Seen 108 times. Injected 62 times. Early injections into belly, legs, and arms, and later into recurrence, which rapidly developed. Recurrence became in length 5½ inches, in breadth 3½ inches, in elevation 2 inches, with paresis of right leg. Despite violent reactions treatment persisted in. Tumor began sloughing in several areas and in January, 1913, no evidence of any mass or disturbance of sensation of limbs.

Since that time patient has reported every week or fortnight; has steadily gained in strength and weight; no evidence of recurrence by examination or x-rays.

April 27, 1914. Shown before the International Society of Surgery at Massachusetts General Hospital through the courtesy of Dr. Porter.

In June, 1914, a routine x-ray examination discovered a small mass apparently arising from lateral surface of spinous process of third lumbar vertebra. This mass was not evident by inspection or palpation and was producing no symptoms. The boy was apparently in excellent health. At operation Dr. Porter removed a circumscribed bone cyst.

Pathological Report. Bone cyst, no evidence of malignancy. This was a benign cyst, an inflammatory reaction. It still seems fair to claim that the toxins averted invalidism with paralysis (perhaps lingering death) from the early rapidly growing recurrence.

Patient examined every two weeks. Last seen Feb. 1, 1915 (2 years since toxins discontinued). Well developed and nourished. Good color. No subjective or objective evidence of recurrence. Scars soft and not adherent to structures beneath. Has worked many months as chauffeur. Recorded in Group F.

Case 95. (Case No. 44, Personal communication, and *Annals of Surgery,* 1913, pp. 772-774). Giant cell sarcoma of spine with paralysis of bladder, rectum and legs. 21, male. Swelling of lower back treated as Pott's disease with plaster case for several months. Patient grew steadily worse. The mass had become very protuberant, occupying the entire region from the 8th dorsal to 3d lumbar vertebrae and extending 3 inches either side of vertebral line. Toxin treatment for 3 months with intervals of rest. Maximum dose, 3 minims. Reactions marked. Progressive diminution in size of tumor with restoration of motor and sensory functions. Entirely well 7 or 8 months later. Subsequently married and has two children. Working regularly. Well without evidence of recurrence 12 years after toxins discontinued. Recorded in Group F.

Case 96. (Table, Case No. 54.) Case of Drs. N. S. Hunting and J. J. Thomas. (B. M. and S. J., 1901, vol. cxlv, pp. 367-372.) Giant cell sarcoma of spine, involving ribs and compressing cord. 39, male. Exploratory operation revealed inoperable involvement of vertebrae.

Pathological Report. Giant cell sarcoma. Mixed toxins continued for 2 years with restoration of health. Well 5 years later, when died of acute lobar pneumonia. Recorded in Group F.

Case 97. (Table, Case No. 63.) Giant cell sarcoma of sacrum. Case of Dr. Vradenburg. A woman. Operation for tumor of sacrum but impossible to eradicate disease.

Pathological Report. Giant cell sarcoma. Toxin treatment with entire disappearance of growth. Patient well 1½ years later. Recorded in Group F.

Case 98. (Case No. 10, p. 148). Giant cell sarcoma of superior maxilla. Case of Dr. J. C. Whitley, St. Louis, Mo. E. W., female. Operation unable to eradicate disease.

Pathological Report. Giant cell sarcoma. Toxin treatment. Maximum dose, 20 minims. Injections into tumor and buttocks. Tumor disappeared. No evidence of recurrence over 2 years later. Recorded in Group F.

Case 99. (Case No. 46.) Giant cell sarcoma of superior maxilla. E. S., boy of 8. Had had 3 teeth and portion of alveolar process removed for growth of superior maxilla. Disease not eradicated.

Pathological Report. Giant cell sarcoma. Evident recurrence in about a year. Toxin treatment then started and continued 3 or 4 months. Reactions often severe. Well with no sign of recurrence 3½ years later. Recorded in Group F.

Case 100. (Case No. 28.) Giant cell osteo-sarcoma of inferior maxilla involving mouth. C. J. V. W., 17 male. A growth 4½x2½ inches occupying entire lower portion of jaw extending back nearly to the angle on either side, and the floor of the mouth was filled nearly to the teeth level with growth. Outer portions of the growth chiselled away.

Pathological Report. (Dr. James Ewing.) "Giant cell osteo-sarcoma. It is not the ordinary encapsulated giant cell sarcoma of the jaw, or of the epulis type, but a tumor infiltrating in all directions and of rapid growth with large amount of new bone formation." Mixed toxins in two days and continued for 10 months. Injections into pectoral region and tumor. Reactions moderate. Dose 5 minims. Tumor rapidly disappeared leaving no deformity. Death in 5 months from nephritis. Recorded in Group F.

CASE 101. (Case No. 25.) Recurrent giant cell sarcoma of ilium and sacrum. Mrs. X., 30. Two months after a fall a hard swelling appeared on ilium. At operation growth found originating in upper and outer portion of bone. Too extensive for radical removal.

Pathological Report. Giant cell sarcoma. Treatment with x-ray and radium for a number of months without benefit. At length confined to bed suffering great pain. Tumor involved whole outer aspect of ilium with 3 discharging siuses. Toxin treatment for 5 months. Maximum dose, 3 minims. Size diminished, tumor softened. Incision made for drainage of cavity size of two fists. Toxins resumed for 11 months. Drainage reëstablished. One year 2 months later in excellent condition without trace of recurrence. Recorded in Group F.

CASE 102. (Case No. 12, p. 149). Giant cell sarcoma of femur. For several months a mass occupying outer aspect of thigh. Exploratory operation revealed a growth arising from middle of femur. Section removed.

Pathological Report. Giant cell sarcoma. Growth very rapid. Toxin treatment started. Maximum dose, 3 minims. Reactions severe. Marked sloughing of growth. After 4 months incision and curettage of necrotic material. Repeated 9 months later.

Pathological Report. No evidence of recurrence. Bony union of fracture. Patient well 6 years later. Recorded in Group F.

CASE 103. (Case No. 24.) Giant cell sarcoma of radius. M. F., 26, female. X-ray of fractured wrist disclosed pathological process of bone. Tumor curetted out.

Pathological Report. Giant cell sarcoma. Seventeen days later no evidence of union. Amputation refused. After 6 weeks of toxin treatment bony union occurred. Patient well 5 years, 5 months later. Recorded in Group F.

CASE 104. (Case No. 39.) Giant cell sarcoma of sternum. Miss C. Enucleation of growth at junction of manubrium and second rib.

Pathological Report. Giant cell sarcoma. Toxin treatment at once, and continued several weeks. Maximum dose, 3 minims. A recurrence had developed which involved entire width of sternum 2½ inches long and elevated 1½ inches. Skin ulcerated. Metastases involving glands of both sides of the neck. Toxins resumed and continued 4 weeks with no effect despite marked reactions. Despite progressive growth and severe hemorrhages, toxins continued. Finally neck swelling disappeared and pain ceased. Tumor was gradually sloughing when patient died of nephritis. This case is regarded by Coley as giant cell sarcoma with metastases. Recorded in Group E.

CASE 105. Personal Case. Referred by Dr. F. G. Smith of Somerville, Mass. Giant cell sarcoma of thigh, invading pelvis. J. W., school boy of 14. May 10, 1913, gives following history:

Feb. 20, fell on ice in such a manner that point of skate struck anterior surface of the left thigh. Three days later a swelling appeared, which progressively increased in size. April 10, Dr. Smith excised as much as possible. Bleeding profuse.

Pathological Report (Dr. W. F. Whitney). Giant cell sarcoma.

Recurrence soon appeared and there is now present a sloughing mass the size of a cantaloupe on the anterior surface of the upper thigh, extending beneath Poupart's ligament into the false pelvis. Toxin treatment at once started and continued 7½ weeks with some disintegration of tumor at site of injection. Maximum dose, 12 minims. Dr. Smith states that during this time pulmonary and hepatic metastases undoubtedly occurred. The father states that boy had a peculiar limp long before skating accident. Died July 8, 1913. Recorded in Group B.

CASE 106. Personal Case. Referred by Dr. H. C. Low, of Boston. Giant cell sarcoma of ilium, sacrum and spine. J. A., Italian, 34. O. P. D. No. 207888. Seen March 24, 1913. Had been operated upon at another institution for growth in left sacroiliac region.

Pathological Report. Giant cell sarcoma. There is now present a healed scar in this region slightly raised upon a mass 1½ x 1½ inches, adherent to ilium. X-ray shows flattening of body of 4th and 5th lumbar vertebrae, with pathological process in ilium and sacrum.

March 31. Mixed toxin treatment started and continued 13 weeks. Reactions often severe. Maximum dose, 16 minims. No appreciable effect. X-ray treatment for 2 weeks without benefit. Patient died Aug. 20, 1913, with ulcerated, bleeding mass size of football. Recorded in Group A.

FASCIA AND MUSCLE.

CASE 107. (Case No. 7, p. 144.) Spindle cell sarcoma of calf. Case of Dr. McArthur of Chicago. 40, female. Radical excision of tumor arising from fascia of calf.

Pathological Report. Spindle cell sarcoma. Recurrence in 7 months size of one-half an egg. Patient several months' pregnant. Toxins for 12 weeks with disappearance of tumor. No recurrence 18 years later. Recorded in Group F.

CASE 108. (Table, Case No. 90.) Recurrent spindle cell sarcoma of knee. Case of Dr. C. S. Cole, New York City. Excision of growth arising from fascia about knee and involving periosteum.

Pathological Report. Spindle cell sarcoma. Recurrence in a few months. Second excision followed by recurrence 3 inches long. Toxins for 3 years with intervals of rest. Maximum dose, 30 minims. Patient in good health 10 years later. Recorded in Group F.

CASE 109. (Table, Case No. 56.) Spindle cell sarcoma of thigh. Case of Dr. H. P. Underset, Toronto, Canada. 22, male. Treatment for 2 or 3 months with mixed toxins for spindle cell sarcoma of thigh with entire disappearance. Patient well 2 years later. Recorded in Group F.

CASE 110. (Case No. 65.) Recurrent fibro-sarcoma of buttock and thigh. Mrs. S., 30. Large recurrent tumor of left thigh, involving muscles and fascia of thigh posteriorly. Mixed toxin treatment for 3 months. Injections into tumor with marked reactions. Five years later two small, hard, movable masses at site of former tumor. Excision.

Pathological Report. Fibrous tissue; no trace of sarcoma. Well without recurrence 20 years after treatment stopped. Recorded in Group F.

CASE 111. (Case No. 81.) Recurrent small round cell sarcoma of back. N. J., boy of 8. Tumor of scapular region developed 2 weeks after a fall, and in a month became size of orange and fluctuant. Aspirated, but promptly refilled. On account of size it was impossible to remove completely. Practically disappeared under 4 months' x-ray treatment, but 3 weeks later recurred. Then mixed toxins started with disappearance of growth. In good health without recurrence 11 years 6 months later. Recorded in Group F.

CASE 112. (Case No. 79.) Recurrent spindle cell sarcoma of arm. Mrs. H. W., 25. A mass arising from fascia of upper arm 12 x 5 x 4 cm. (pathological report, fibro-sarcoma) quickly recurred. Fifteen months later there existed a definite swelling of two-thirds of the upper arm, involving ¾ of its circumference. Mixed toxin treatment still in progress at time of report (1 year 9 months). Injections into pectoral region and tumor. Reactions severe. Growth somewhat diminished in size. Recorded in Group E.

CASE 113. (Case No. 51.) Recurrent spindle cell sarcoma of palm. Mrs. M., 18. Excision of tumor of palm half size of hickory nut, followed quickly by recurrence. This also was excised.

Pathological Report. Spindle cell sarcoma. A second recurrence developed. Mixed toxins for 3 months. Maximum dose, 20 minims, Tumor disappeared but recurred in two years, resisting further toxin treatment. Amputation of arm was followed by general metastases and death in a few months. Recorded in Group C.

CASE 114. (Case No. 52.) Six times recurrent spindle cell sarcoma of palm. A. C., 21, female. The sixth recurrence of a spindle cell sarcoma of the palm was treated for 18 months with mixed toxins. The necrotic tumor tissue was then removed. Recurrence in 14 months. Forearm was amputated followed by metastases in brain. Recorded in Group C.

CASE 115. Personal Case. Referred by Dr. E. H. Risley, of Boston. Spindle cell sarcoma of thigh. M. O., Russian, 40. O. P. D., No. 58388.

Dec. 27, 1905. For 10 years has had a tumor growing in thigh. At present extends from just below trochanter almost to knee. Solid, not adherent to skin and apparently not adherent to bone. Mass excised by Dr. Hugh Williams on following day.

Pathological Report (Dr. W. F. Whitney). Round cell cystic sarcoma.

June 1, 1908. Recurrence at original site size of crab-apple. This and two small masses size of marbles removed by Dr. F. T. Murphy from muscle bed.

Pathological Report (Dr. W. F. Whitney). Small spindle cell sarcoma.

Oct. 19, 1909. Recurrence 10 x 4 inches slightly movable on bone. No evidence of extension into abdomen. Treated with mixed toxins from this day until June, 1910 (8 months). Injections every other day at first, then twice a week. Maximum dose, 10 minims. For 3 months tumor remained practically the same size, perhaps of slightly softer consistency, then grew rapidly, breaking down into a sloughing cauliflower growth. Hemorrhages frequent.

In June the tumor was nearly twice the size of a football. Died 2 days after amputation at hip.

Pathological Report (Dr. W. F. Whitney). Small spindle cell sarcoma. Recorded in Group B.

CASE 116. Personal Case. Referred by Dr. Wm. M. Conant. Mixed cell sarcoma of thigh. W. P. S., a clerk of 42. House Nos. 186608, 186632, 186737 and 187278.

Dec. 17, 1912. For several months has had soreness in groin necessitating use of a cane for 2 or 3 months, and two canes for about a month. Pain almost constant. Patient has osteitis deformans. Left hip can be flexed to about right angle. Other motions normal. Mass on anterior aspect of thigh extending from pubes one-third way down the thigh and posteriorly to tuberosity of ischium (about 4 x 5 inches), firm, apparently encapsulated, only slightly tender. Mass size of orange removed for examination.

Pathological Report (Dr. W. F. Whitney). Large mixed cell fibro-sarcoma.

Toxin treatment started Jan. 25, 1913, and continued in hospital until Feb. 13. Injections every other day. Reactions very severe. Maximum dose, 6 minims. No change in size of growth, but consistency distinctly softer. Patient then discharged to local physician, Dr. S. E. Donovan, of New Bedford, Mass., who continued treatment under my direction until March 11, 1913 (total of 7 weeks). Injections every second or third day. Maximum dose, 12 minims. At end of this time suffering intense. Mass about 6 x 6 x 5 inches, extending within pelvis and encroaching upon bladder and rectum. Patient died April 6, 1913. Recorded in Group A.

CASE 117. Personal Case. Referred by Dr. C. L. Scudder. Spindle cell sarcoma of thigh. B. H. C., 22, male.

May 21, 1914. Two years ago began to have pain in right thigh, and a freely movable mass of firm consistency, size of a fist developed. This was removed March, 1913, in another city. A recurrence developed which was removed in 3 months. A second recurrence developed and was excised Jan. 14, 1914.

Pathological Report (Dr. H. T. Karsner). Spindle cell sarcoma. The recurrence after this operation was extremely rapid, a small tumor being already present when the patient was discharged from the hospital. Now a tumor of the posterior aspect of right thigh size of a small cantaloupe movable, not attached to bone. Skin covering tense and bluish-red. X-ray examination (Dr. W. J. Dodd) shows no evidence of involvement of bone. On the lower abdomen there is a small mass, firm, freely movable, apparently entirely within subcutaneous tissue, the size of a walnut. This mass excised.

Pathological Report (Dr. H. T. Karsner). Mass 2 x 2 x 1 cm., covered by skin. Cut surface pallid, bulging, fleshy mass with a few small points of necrosis. Fibroma.

Toxin treatment of thigh tumor started May 26, 1914, and continued for 5 days. Maximum dose, 3 minims. Reactions moderate. Discharged to local physician, Dr. J. N. Roy, of Webster, Mass., for further treatment. Dr. Roy writes: Toxins continued 4 weeks, when tumor broke. Maximum dose, 5 minims. Reactions severe. Patient died July 21, 1914, of sudden, severe hemorrhage from large vessel involved in growth. No metastases were evident. Recorded in Group A.

CASE 118. Personal case. Referred by Dr. Hugh Williams. Round cell sarcoma of thigh. E. S., factory hand, 55. O. P. D., No. 148376. Seen March 7, 1910.

On May 25, 1906, had growth of 4 years' duration on anterior aspect of left thigh removed. It was thought to be a lipoma.

July 7, 1909. Another operation in same city for tumor in same region.

Pathological Report. Round cell sarcoma, with tendency to large rather than small cells.

For the past 5 months a recurrence has been growing and extending upwards into abdomen. The mass is now roughly 8 x 6 inches and lobulated. Toxin treatment for 3 weeks without appreciable effect. Patient then lost sight of. Recorded in Group A.

SKIN AND SUBCUTANEOUS TISSUE.

CASE 119. (Case No. 1, p. 136.) Melanotic sarcoma of neck. Case of Dr. Greenwood, Leeds, England. Recurrence 2½ x 3 inches after excision of melanotic sarcoma. Eight days later mixed toxin treatment started and continued for 2 years 1 month (105 injections). Maximum dose, 15 minims. Growth disappeared in 5 months. Well 2 years after disappearance of mass. Recorded in Group F.

CASE 120. (Case No. 76.) Recurrent sarcoma of shoulder. H. B. M., 56, male. A benign tumor, which had existed for many years, began to grow rapidly and was excised.

Pathological Report. Spindle cell sarcoma. A small recurrence in 5 months. Mixed toxin treatment for several months. Patient well without evidence of recurrence 9 years later. Recorded in Group F.

CASE 121. (Case No. 61.) Three times recurrent round cell sarcoma of lip. M. S., girl of 5. Three excisions of growth of lip followed quickly by recurrence. Growth 1½ inches long when toxin treatment started. Injections near tumor. Reactions mild. Tumor became firmer and smaller. Then excised.

Pathological Report. No trace of sarcoma. Treatment continued with intervals of rest for one year. Patient well without recurrence 16 years later. Recorded in Group F.

CASE 122. Personal Case. Referred by Dr. E. H. Risley. Melanotic sarcoma of back. F. H. F., iron worker, 35.

Under treatment two years, two months; seen 224 times; injected 195 times; maximum dose 53 minims. July 14, 1911, Dr. Homans excised, in the O. P. D., a growth of five weeks' duration arising from a pigmented mole over the right scapular region.

Pathological Report (117-73). "Specimen for examination consists of a rounded tumor 3 cm. in diameter which is sessile and dark purplish red with a surrounding oval-shaped piece of skin and subcutaneous tissue, varying in width from 1 to 2 cm. Section shows the center of the tumor infiltrating the subcutaneous structures. Microscopical examination shows a richly cellular tumor containing much brownish yellow pigment. The cells appear to have an alveolar arrangement. They are fairly large and spindle shaped with rather deeply staining nuclei. The tumor seems to be surrounded by a tough layer of fibrous tissue but in places this fibrous tissue is very faint and the tumor appears to have gone beyond it. Melanotic sarcoma."

Oct. 26, 1911, Dr. Cobb excised, in the House, a recurrence to the outer side of old scar.

Pathological Report (1110-129), Dr. W. F. Whitney. "A piece of tissue from the shoulder measuring 6 x 4½ cm., in the midst of which was a coal black nodule 1½ cm. in diameter. Microscopical examination of the nodule showed large cells, many of them containing a black pigment with a little intercellular substance between and irregularly infiltrating into the periphery. Melanotic sarcoma."

I saw patient fifteen days later with recurrence in second scar 2½ x 1½ inches, and a palpable mass in the axilla the size of a pigeon's egg. Toxin treatment instituted. Within twelve days a mass the size of an English walnut had appeared in the same scar. The two masses became confluent but were entirely sloughed out in one month, leaving a soft thin scar. During this time, however, a recurrence appeared in the upper scar, which became in size 3½ x 2 x 1 inches. This whole mass was entirely sloughed out by Jan. 13, 1913. A pigmented mass appeared in the right pectoral region early in January, 1912. It ruptured in three weeks with local injections but increased in size until 3 x 2 inches. There were several erysipelatous attacks, when whole pectoral region would be red, hot, tense, and tender, with appearance of a second gland in the axilla and another in the neck. The latter became the size of a cherry, but entirely disappeared in one month. The axillary masses became the size of hen's and pigeon's eggs during these erysipelatous attacks, but within a month became decreased to size of pigeon's and sparrow's eggs and never became any larger until treatment was discontinued eleven months later, *i.e.* the upper axillary mass which was present when first seen (Nov. 10, 1911) was no larger and just as movable twenty-six months later when treatment was stopped (Jan. 28, 1914). The entire breast tumor (3 x 2 inches) sloughed out with continuous appearance of dark pigment by August, 1913, and never recurred. At this time patient was in excellent flesh with good appetite and no evidence of internal metastases. I was arranging with social service department for light employment. He then disappeared on a spree, returning in nineteen days haggard and weak. Treatment was resumed, but he never regained his former tolerance for toxins. The average dose for the last months was only 4.8 minims but the reactions were just as severe as he had experienced when taking 40 to 50 minims. New masses began to appear on abdomen, arms, breast, and back. He died February 26, 1914, with metastases in the spinal cord and abdomen. Recorded in Group D.

CASE 123. Personal Case. Referred by Dr. G. W. W. Brewster. Spindle cell sarcoma of shoulder. W. K. S., Canadian janitor of 44. House No. 185026.

Sept 18, 1912, appeared with profuse hemorrhages of tumor of right arm at insertion of deltoid. Six months ago he had scratched a mole in this region, and since then it had painlessly increased in size until now it is as large as an orange. Tumor firm, lobulated, not connected with bone, and ulcerated in several places. A number of glands size of walnut in axilla. Consensus of opinion after examination was against radical operation. Tumor mass was therefore excised with wide margin, and 4 days later axilla entered, but growth had infiltrated walls of vessels and was obviously inoperable. A mass size of lemon removed.

Pathological Report (Dr. W. F. Whitney, 129-77). Spindle cell sarcoma.

One week later treatment with mixed toxins started and continued for 15 weeks. Injections every 2 or 3 days. Reactions very severe. Maximum dose, 16 minims. When toxins were started there was a mass over deltoid size of walnut and 2 masses in axilla about same size. During first 3 months of treatment all masses became softer and smaller; that on arm practically disappeared; those in axilla becoming about the size of beans. From this time patient troubled with much nausea and vomiting so that dose was necessarily reduced. Two weeks later mass evident in abdomen for first time. Grew rapidly. Toxins stopped. Mass apparently involved liver and either stomach or transverse colon, and within a month had extended from right flank to anterior axillary line on left and from costal margin to level of umbilicus. Recorded in Group D.

CASE 124. Personal Case. Referred by Dr. Beth Vincent. A multiple melanotic sarcomata. M. J. R., 38, female. Cigar maker. Hospital Records. E. S., vol. 688, p. 127; E. S., vol. 736, p. 153; W. S., vol. 727, p. 121.

June 4, 1910, reports with history of injury to left hand 18 months previously, followed by lesion with scab of dark brown color, which has persisted and has painlessly increased in size. Discolored, ulcerated, slightly raised area 1 x 1½ inches. Excised by Dr. Brooks with wide margin. Pathological examination by Dr. F. C. Kidner showed cells, very many with mitotic figures, occurring in mass of evidently infiltrated character and with pigment, intra and extra cellular.

Sept. 27, 1911. Recurrence size of a walnut, dark bluish color, and mass in axilla size of half an orange, firm, smooth, somewhat adherent, not fluctuant or tender. Dr. Cobb made attempt to dissect axilla. Tissue melanotic and very vascular. Growth on hand excised with wide margin. Patient then received daily x-ray treatment.

Three months later mixed toxins started. In meantime patient had developed tumor of left breast size of an egg. Mass in axilla size of English walnut. Two masses above umbilicus size of marbles. The latter were excised and microscopic examination showed melanotic sarcoma. Treatment continued for two months. Maximum dose, 16 minims. Reactions severe. Injections were given in various masses, either singly or collectively. Practically no change for 3 weeks, when blue-black subcutaneous masses were noticed in left neck, over left scapula and left acromion. Injections subsequently caused swelling and softening of growths, but new subcutaneous masses appeared from time to time and toxins omitted at end of two months. Recorded in Group D.

CASE 125. Personal Case. Referred by Dr. J. B. Hartwell. Multiple melanotic sarcomata. H. B. S., an English blacksmith of 25. O. P. D., No. 216268.

April 25, 1913. Reports with history of excision of small tumors from the left parotid region and left supra-orbital region in England in January, 1913. Three weeks ago recurrence appeared in parotid region, but other smaller masses had appeared on chest two months ago. At present a nodular, non-tender tumor over left parotid size of English walnut; several small tumors in left supraorbital region size of peas; two or three small pigmented nodules over left breast; and two small pigmented nodules on left arm. I advised against toxin treatment, but it was undertaken as a last hope and continued for 3 weeks. Although some tumors softened and sloughed out, new metastases continued to form. Recorded in Group D.

CASE 126. (Case No. 80.) Recurrent melanotic sarcoma of toe. Dr. D. Second toe amputated for malignant degeneration of naevus.

Pathological Report. Melanotic sarcoma. Several months later a recurrence in the groin, size of an egg, was excised. Pathological report, pigmented sarcoma. In two weeks a recurrence 2 x 3 inches. Mixed toxin treatment for six months. Tumor disappeared in a month. Seven months later patient died of metastases in brain. Recorded in Group D.

PAROTID.

CASE 127. (Case No. 56.) Recurrent round cell sarcoma of the parotid. E. S., 55, male. Removal of tumor of the parotid size of hen's egg attempted.

Pathological Report. Small round cell sarcoma. Quickly recurred. Toxin treatment for eight months. Maximum dose, 2 minims. Reactions moderate. In eight months tumor had disappeared. No recurrence five years, eight months later. Recorded in Group F.

CASE 128. (Case No. 63.) Recurrent spindle cell sarcoma of the parotid. W. L., 41, male. Three operations upon tumor of parotid, followed by recurrence.

Pathological Report. Spindle cell sarcoma. Toxin treatment started when tumor involved parotid and submaxillary region. Treatment for ten weeks with entire disappearance of growth. Six years later death from hemorrhage from gastric ulcer. No evidence of sarcoma. Recorded in Group F.

CASE 129. (Case No. 60.) Thrice recurrent mixed cell sarcoma of the parotid. Mrs. B., 25. Three operations upon the parotid followed by recurrence.

Pathological Report. Mixed cell sarcoma. Toxin treatment begun when tumor size of small egg, infiltrating entire gland. Treatment continued four months. Mass reduced in size to small movable nodule. This was excised. Pathological report, no trace of sarcoma. Patient well ten years later. Recorded in Group F.

CASE 130. (Table Case No. 10.) Small round cell sarcoma of the parotid. Case of Czerny. A tumor of the parotid had been removed, followed by inoperable recurrence size of fist.

Pathological Report. Round cell sarcoma. After eighteen injections, tumor resolved to a small mass, which was removed. Patient well one year later. Recorded in Group E.

CASE 131. Personal case. Referred by Drs. F. T. Murphy and Farrar Cobb. Large spindle cell sarcoma of the parotid (recurrent). G. P. C., an English butler of 34. House No. 178774.

Feb. 10, 1911, Dr. Murphy excised right parotid for mass 3 cm. in diameter, not adherent to the skin, and without glands in neck.

Pathological Report (112-31), Dr. Whitney. Fibrosarcoma. An elliptical piece of skin 6 x 3 cm., with a rather firm indurated tissue beneath, 2 cm. in thickness. Microscopical examination showed normal parotid tissue, in part of which was a firm rather fibrous new growth composed of fibrous tissue, in places very cellular with large elongated nuclei. This tissue infiltrated between the lobules of the gland itself.

About ten days after operation three injections of the mixed toxins on successive days with marked reaction. Maximum dose, 2 minims. Further treatment refused.

Seven months later Dr. Cobb operated for considerable recurrence causing paralysis of the right mouth and right eyelid.

Pathological Report (1110-77) Dr. Whitney. Spindle cell sarcoma. A piece of skin 6 x 3 cm., with a rounded ulcerated area about 2 cm., beneath which was an infiltrating growth. Microscopical examination of the growth showed it to lie in the subcutaneous tissue, and to be formed of interlacing bundles of rather large elongated spindle cells with small openings hollowed out in the tissue for blood vessels.

Two weeks later recurrence size of walnut. Mixed toxins resumed and continued for two months. Reactions marked. Maximum dose, 6 minims. Mass practically disappeared in six weeks, but within a week reappeared, and in another week was the size of half a crab apple, with a second mass the size of a walnut, close by. Patient died in two months. Recorded in Group C.

Case 132. (Case No. 69.) Fibrosarcoma of the nerve sheath (anterior crural), with involvement of the muscle and glands. B. C. C., boy of six. Mass in the right groin appearing three days after injury with baseball; grew rapidly. Excision with recurrence in fortnight. Toxins for three or four months. Reactions moderate. Two years ten months later patient well without recurrence. Recorded in Group F.

Case 133. (Table Case No. 91.) Recurrent melanotic sarcoma of the retina. Case of Dr. T. S. McDermott of New Haven. An attempt at removal was followed by recurrence involving the orbit. This was hopelessly inoperable.

Pathological Report. Melanotic sarcoma. Toxins for three months with disappearance of growth. Three and a half years later, however, metastases in liver, and death. Recorded in Group D.

Case 134. Personal Case. Referred by Dr. Balch. Round cell sarcoma of the spermatic cord involving the abdominal muscles. S. G., Italian of 40. W. S., vol. 675, p. 305. Sept. 8, 1910. Admitted with history of pain and mass in left groin after heavy lifting five months ago. This mass had increased in size until it now extends from the internal ring to base of scrotum. Sept. 9, Dr. Balch performed a left orchidectomy with excision of portion of lower abdominal wall for infiltrating tumor.

Pathological Report (109-32), Dr. F. C. Kidner. Round cell sarcoma.

Toxin treatment started in four days and continued one month. Despite severe reactions a recurrence quickly appeared and grew rapidly until size of a large pear when toxins discontinued. Recorded in Group A.

ERRATUM AND ADDENDA.

Under Conclusions (page 335) the last line of the sixth paragraph should read, An equal division of round and spindle cell, instead of "An equal division of round and small cell."

Case 1 (page 336) was seen March 18, 1915. There was no objective or subjective evidence of recurrence (3 years, 11 months since toxins discontinued).

Case 3 (page 337) has written (March 1, 1915) since the paper went to press that there is no evidence of the old trouble and that she is feeling perfectly well. (2 years, 11 months since toxins discontinued).

Case 94 (page 442) was examined March 16, 1915. There was no objective or subjective evidence of recurrence (2 years, 1 month since toxins discontinued).

Medical Progress.

EIGHTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY.*

By Robert B. Osgood, M.D.; Robert Soutter, M.D.; Hermann Bucholz, M.D.; Harry C. Low, M.D.; and Murray S. Danforth, M.D., Boston.

TUBERCULOSIS.

DaCosta[1], after a thorough discussion of the subject, concludes that the occurrence of traumatic tuberculosis is a necessary deduction from acknowledged facts. He does not believe that the dogmatic decision which has long been a precedent in court, that traumatism has nothing to do with the determination of tuberculosis, can be upheld.

[Ed. Note.—We called attention in the Fifth Report of Progress in Orthopaedic Surgery to the investigations of Wilson and Rosenberger[2], in which nearly the same conclusions were reached. The experience of the editors is also in general accord with this view. It is obvious that tuberculosis does not exist unless tubercle bacilli are present and that traumatism does not produce tubercle bacilli. Nevertheless, their very common existence in the body, without giving rise to symptoms, is well known, and in the light of these investigations it seems probable that trauma may be the direct exciting cause of their rapid development at the seat of the injury into a definite tuberculous lesion.]

Froelich[3] has given much consideration to the tuberculous processes in infants and has pointed out certain special features which these infantile cases present. 1. A tendency to hypertrophy in both bone and joint affections with an early opening and a short sinus period. 2. The frequent involvement of the shaft of the bone in contradistinction to the usual epiphyseal lesion of later life. 3. The tendency to dislocation, especially in the diseases of the hip joint.

---

* This report is based on a review of 303 articles selected from about 500 titles having to do with orthopaedic surgery, appearing between March and August, 1914. References are given to only such articles as have been selected for note and comment.

4. The occurrence of an acute form most common in the knee and elbow, running a rapid course, healing soon after evacuation, and leaving little stiffness. 5. The common existence of multiple bone foci. 6. The predilection of the process for the testicle and the immunity of the prostate. In making the diagnosis syphilis and a staphylococcus infection must be carefully excluded. The mortality he considers to be about ten per cent. The process in the viscera and peritoneum runs the same grave course as in older children, but in other locations the tendency to spontaneous recovery is very noticeable. This should lead to much more conservative surgical treatment than in older children.

Huntington[4] is still sceptical concerning the permanent cure of bone tuberculosis by rest, fixation, traction and general systemic treatment. He does not believe in the efficiency of conservatism and believes that most bone foci can be easily reached. He reports further cases in which following MacNamara he has tunnelled the neck of the femur through the great trochanter to reach foci in the head of the bone. He thinks epiphyseal lines are often invaded by the disease but need rarely be considered. The cavity may be treated with pure carbolic acid and alcohol, phenol, camphor, Beck's paste, etc.

[Ed. Note.—With the belief which Huntington seems to hold that tuberculosis of the joints is usually best treated by operation designed to remove the tuberculous disease, the editors cannot agree. Localized bony foci not involving epiphyses or epiphyseal lines may perhaps well be so treated in children. In adults surgical procedures designed to prevent the spread of the disease and bring about a bony ankylosis may be often advisable. Rogers' experiments on young dogs have shown that very decided disturbances of growth may result from tunnelling operations through the diaphysis into the epiphysis, and results from purely conservative measures coupled, as in Rollier's clinic, with heliotherapy leave little to be desired. The men who have had largest and longest experience with both radical surgical and conservative treatment in children are the ones who most strongly advocate rest, fixation, and general systemic treatment and oppose surgical procedures designed to radically remove foci of disease involving the joint structures.]

Vulpius[5] considers his results from the Albee operation of bone graft into the spinous processes in tuberculosis of the spine to have been very satisfactory. He emphasizes the eminent pain reducing effect of the operation and the increased activity of the children. He insists upon prolonged rest after the operation and applies a brace.

Jacobs[6] advocates the Albee operation in cases where conservative treatment has failed or the element of time is an important factor, believing that the method represents a great advance in the treatment of Pott's disease except in early childhood. He believes that a callus firm enough to stand the great longitudinal sliding strain in these bone grafts needs many months for its development. He thinks fixation in a jacket or brace should be maintained for six months or more.

Beccherle[7] reports a case of fibroepithelioid tumor of the tendon sheaths of the hand. It is of interest in calling attention to the fact that tubercle bacilli may cause an atypical formation resembling a neoplasm.

ARTHRITIS.

Rosenow[8] has failed in only three out of thirty-eight cases of "arthritis deformans" to isolate organisms from glands draining the affected joints. In fourteen cases he found streptococci, in nine a peculiar staphylococcus-like organism at first completely or partially anaerobic, in nine the bacillus Welchii, in three staphylococci, in one the bacillus mucosus, in one the gonococcus. The author states that "There is often great sensitiveness of the patient to injection of killed organisms (autogenous vaccines) isolated from these glands and marked improvement may follow the injection. These facts in conjunction with the affinity of the organism for joints and muscles of dogs and rabbits after intravenous injections would seem to leave little doubt that the bacteria found in the glands draining the joints in arthritis deformans are the actual cause of the disease." He attributes part of the joint changes to the shutting off of the blood supply of the joints by the plugging of the vessels from endothelial proliferation induced by the organism. This possibly is further suggested by the experiments of Axhausen,[9] who produced the gross and miscroscopic changes peculiar to arthritis deformans by ligating the blood vessels supplying the structures of certain joints in dogs, and by the later work of von Manteuffel,[10] who, following the work of Rudnicki on the soft parts, produced artificial sclerosis of the vessels and changes in the articular ends of the bones by freezing and congestion. In these experiments of von Manteuffel there was finally complete disappearance of the cartilage and of the entire joint with connective tissue ankylosis of the two bones.

[Ed. Note. From the Editors' point of view it is unfortunate that the types of chronic arthritis are not more accurately differentiated by Rosenow. We suppose that he refers to the toxemic or infectious types and not to the senile hypertrophic types of arthritis deformans, or as Nichols and Richardson call them, the degenerative non-ankylosing types. In these latter we should not expect bacteria to be found as the causative agents, though the diminished blood supply from lime deposit in the vessel walls may well exert an influence on the joint changes.]

Hastings,[11] realizing that cultures from the blood, joints, and possible foci cannot be made in all of a series of cases and that no one of these would be considered as a determining factor in all cases, has chosen the complement fixation test as a means of determining the bacterial cause of the "chronic infective deforming arthritis." Hastings' observations cover some 75 cases. Forty per cent. of these reacted only to the complement fixation test for streptococcus viridens, in others the gonococcus, Wassermann, and other fixation tests were positive. He considers it very rare that the manifestations of "arthritis deformans" are due to the gonococcus.

Thalhimer and Rothschild[12] produced an arthritis in half the rabbits they injected with streptococcus mitis. In character this arthritis was similar to the process caused by the micrococcus rheumaticus. They think that it is evident that an arthritis can be produced experimentally by blood inoculations of various streptococci and micrococci of the less virulent (non-pyogenic) group, but that evidence is still lacking that any distinct variety or species of streptococci is the specific cause of arthritis, at least in rabbits.

Moore[13] has studied the action of vaccines and concentrated antistreptococcus serum in experimental streptococcal arthritis in rabbits, and while there are yet too few cases for any conclusions, the work is suggestive. Moore's experiments were stimulated by the fact that antistreptococcus serum had not been altogether satisfactory and he desired to find out whether in the presence of certain antibodies the serum was of low potency, hence the trial of the concentrated sera. Concentrated serum does not appear to have any effect on acute arthritis, though it may act as a prophylactic against further experimental infection and it may produce an immunity of from one to two months.

Greeley[14] writes rather positively concerning the cause, and very optimistically concerning the treatment of "chronic rheumatism." He considers that it is experimentally proven that the introduction into an animal of a parasitic organism whose virulence is nearly balanced with the host's power of resistance frequently results in the establishment of chronic foci of infection in locations not reached by the blood plasma and leucocytes in full concentration. He believes that pathologically the lesions of chronic rheumatism occur in this way where the circulation is at a minimum in the arteries in the ends of the bones. He considers that the results in fifty-three cases which he has treated by means of autogenous vaccines have been satisfactory. He obtained the vaccine five times from the blood, fifteen times from the urine, and thirty-three times from the throat, the latter source he considers to be always satisfactory except in gonococcal infection. The vaccines should be autogenous and should never be given in acute cases. The size of his dose (which does not seem to be necessarily exact) is from one hundred million to one billion, not oftener than once in eight to ten days. He believes implicitly in the future of this treatment.

[Ed. Note.—We should like to share in the optimism of Dr. Greeley, but a considerable observation of the results obtained from the use of autogenous vaccines, mainly derived from the throat, does not lead us to believe that the problem at present is either simple or sure of solution by this method. Not only have we failed to obtain any marked improvement in many cases in which we believe the vaccines to have been administered with knowledge and with judgment, but in certain cases it has been evident that the treatment had been too long continued until the patient did not react and seemed more susceptible to fatigue and other infection.]

Brackett's[15] paper on arthritis associated with lesions of the genito-urinary tract is based on a wide experience, and his analysis of types and treatment seems to us clear and sound. He believes the responsible organism to be either the gonococcus or the colon bacillus. The gonococcal infections are of two types. One, usually monarticular, in which there is a direct bacterial invasion of the joint characterized by an arthritis of sudden appearance, giving evidence of very acute synovial inflammatory involvement. This process later shows an inherent tendency to marked contractures with strong adhesions and destruction of articular cartilage. In the acute stage the organism may at times be recovered from the joint. The second type is polyarticular and of a mildly inflammatory nature, slowly damaging the joints from toxic infection. This type may develop with an entirely quiescent external urethral condition. Arthritis associated with a colon bacillus infection of the genito-urinary tract is of a severe persistent type of multiple distribution, having a predilection for the larger joints and frequently for the spine. The treatment in the acute type of Neisser infection should be directed toward the urethral focus and also toward the joint condition. This later requires often radical treatment; in the early stages hot salt solution lavage through a small incision and a subsequent drainage. The later stages of these cases offer ideal conditions for inflation with 4% iodoform oil. (See article on Iodoform Treatment of Ankylosed Joints, BOSTON MEDICAL AND SURGICAL JOURNAL, June 4. 1914). In the toxic types of gonorrheal infection and in the arthritis of colon bacillus origin, the treatment after search for and elimination of the focus should consist of measures aiding the absorption of exudates, improving nutrition, and favoring the return of motion.

Manning and Fassett[16] report a case showing a typical clinical picture of Still's disease with small palpable glands in the cervical, axillary. and inguinal regions, in which carious teeth and a chronic otitis media were apparently the causes of the arthritis. Under general hygiene and the removal of the supposed sources of infection the condition rapidly improved. The case seems to be one more proof that Still's disease is an infectious or toxic arthritis.

O'Mallay[17] draws an interesting analogy between otosclerosis and arthritis deformans, meaning evidently the osteoarthritic, hypertrophic, or degenerative type. He reaches the conclusion that they are due to the same cause. "The essential factor underlying the morbid changes (in both diseases) is a chemical one affecting the nutritive stability of developing and fully developed bone and cartilage comparable to the rachitic phenomena, but how these chemical disturbances are actually initiated it is at present not possible to explain. Otosclerosis is osteoarthritis of the stapedio-vestibular articulation and of the bony labyrinth capsule."

[Ed. Note. We are interested in these conclusions of O'Mallay, working in another specialty. From a clinical point of view at least the hypertrophic or degenerative type of deforming arthritis occurring late in life has seemed to be best explained on a chemical rather than a bacterial theory of cause.]

We wish to mention a dissertation of Golant[18] on ankylosis of the spinal column. This is based on a careful study of nine cases from von Bechterew's clinic, two of which died and were subjected to a careful macroscopic and microscopic study of the spinal column and the central nervous system. There are 26 illustrations and a bibliography of 221 titles. His most important conclusion seems to be that in certain cases symptoms of the involvement of the central nervous system predominate and at autopsy there are found both chronic meningitis and degenerative changes in the substance of the spinal cord and spinal roots which justified the separation of these cases into a special type known as Bechterew's disease.

Although Perthes[19] has described the typical clinical picture of the condition, osteoarthritis deformans juvenilis, Drehmann[20] wishes to limit more strictly the use of the name by excluding all those cases showing any inflammatory signs or any tendency to contracture. The occurrence is in children between five and ten years of age and is usually limited to one hip. The first symptom is limping without much pain and with free motions except abduction. There is no outward rotation as in coxa vara,—in fact, sometimes slight inward rotation causing the trochanter to appear in the x-ray as slightly enlarged. There is as a rule no shortening. After several years the limp frequently improved and except for a more or less pronounced limitation of abduction there may be a perfect restoration of function. Perthes' pathological examination of a case showed intact cartilage, the head flattened, and its centre depressed. Drehmann, studying the course of cases by radiographs, has observed an atrophic area in the neck just beneath the epiphyseal line, which changed its form under pressure of the head. The primary change he believes to be in the neck, the head of the bone adapting itself to this. He considers the disease to be analogous to coxa vara adolescentium, but in this epiphyseal form the head shifts in the varus direction, *i.e.* downwards, while in the osteoarthritis deformans juvenilis of Perthes the shifting of the head over the neck is in the valgus direction, *i.e.* upwards. Drehmann therefore proposes the name coxa valga epiphysaria. The cause of the condition is still obscure.

The paper of O'Reilly[21] on Joint Syphilis is worthy of comment. It represents a study of 26 cases which show the necessity of careful history taking and both clinical and laboratory examinations in all cases of arthritis. O'Reilly found that 10% of the cases of arthritis in the clinic of Washington University Hospital in St. Louis were syphilitic in origin, and among these cases were many of supposed tuberculosis, osteoarthritis, and infectious arthritis. O'Reilly believes that the Wassermann reaction should be done in all cases of arthritis.

D. W. C. Jones[22] suggests a new etiological classification for arthritis in line with that accepted for disorders of other parts of the body. This seems to the Editors to be simple, inclusive, and based on clinical knowledge. While it is perhaps no better than certain other classifications, it is added evidence of the more general acceptance of the fact of the existence of definite types of chronic and acute joint disease and of the importance of their recognition. The suggested classification is as follows: 1. Senility—Osteoarthritis. 2. Metabolic Toxemia — Gout. 3. Infectious Toxemia — Acute Rheumatism, Rheumatic Arthritis. 4. Focal Infection—Gonorrheal, Pneumococcal. 5. Granulomatous Infection — Tuberculous, Syphilitic. 6. Neoplasms (Rare). 7. Trauma — Traumatic Synovitis, Hemophilic Joints.

PARALYSIS.

Poliomyelitis—Obstetrical.

Poliomyelitis.—If their observations are verified, Saunders, Meisenbach, and Wisdom[23] have made a very important contribution to the epidemiology of Poliomyelitis. With others they have been impressed by the variety of diseases associated with paralysis which affect farm animals, children, hogs, dogs, pigeons, and others. They searched, therefore, for a larval fly which when ingested might produce these conditions. The common green backed fly (Lucilia Caesar) seemed to fulfill these requirements, depositing freely its eggs in the carcasses of animals. Upon these dead bodies chickens often feed. Experimentally they produced in monkeys and other animals a characteristic poliomyelitis by inoculating them with larvae obtained from the bodies of dead fowl. The course of the disease and the microscopic lesions were typical. They transmitted the disease by inoculations with emulsions of the spinal cord. They were able to produce the disease in hogs, chickens, rabbits, and guinea pigs by both inoculations and ingestions of the infected larvae. These larvae may be left by the fly on any piece of food upon which she rests and the authors plead strongly for the extermination of the fly, the isolation of all sick animals, the covering of manure piles, and the screening of kitchens.

Francis[24] reports unsuccessful attempts to transmit poliomyelitis by the bite of the blood sucking cattle fly (Lyperosia irritans). Shaved monkeys, sick with poliomyelitis, were bitten by these flies for six days. The flies were then allowed to bite four well monkeys for six days. The disease was not transmitted in any instance.

Flexner, Clark, and Amoss[25] state that a strain of the virus of poliomyelitis transmitted through monkeys for four years showed three distinct stages of virulence each covering different periods of time. They suggest that this phenomenon of the cycles of change in the virulence may be correlated to the wave-like fluctuations in epidemics.

Robert Jones[26] has reviewed in his characteristically helpful manner the surgical treatment of poliomyelitis, emphasizing the important principles which should form the basis for all orthopaedic treatment. Perhaps the most essential factor is the possession by surgeon and patient of "boundless spirit and buoyant enthusiasm." In his description of his operations for correction of position and restoration of function in the paralyzed member by tendon transplantations, etc., he is most explicit, and one feels that no detail of technic is too small to be most carefully carried out.

Artificial ligaments and tendon fixations, especially the latter, he believes to be of great usefulness, not only because they improve function by maintaining a better position, but also because they allow over-stretched but not completely paralyzed muscles to regain some degree of power.

[Ed. Note.—Those who have had the opportunity to observe the results obtained by Mr. Jones by the use of the surgical measures he advocates need no better proof of the soundness of the principles which have dictated his exquisite technic.]

Netter[27], on the principle that the serum of persons who have had an attack of poliomyelitis might contain antibodies capable of exerting an effect upon the virus present in an acute attack, has made intraspinal injections of serum obtained from old cases of poliomyelitis. His most striking case was that of a man of 34 who was apparently recovering from a severe, acute poliomyelitis, when on the eighth day his legs became paralyzed. There was retention of urine and disturbance of sensibility extending up to the costal arch. On the ninth day, with the paralysis apparently progressing, Netter injected into the spinal canal 7 c.c. of serum obtained from a person who had had poliomyelitis seven years previously. By this time the anesthesia extended to the nipples, but on the evening of the day on which the injection was given the patient could "feel his toes." He was given ten injections in eleven days, the amount totalling 66 c.c., the serum being obtained from eight different persons. Netter had applied this treatment in four other cases, but with such timid technic and with so few injections that although he says there was marked benefit apparent each time, yet some paralysis was left or the patients succumbed sooner or later.

Fraser[28] has reported the results of his careful clinical observation of ninety cases of acute epidemic poliomyelitis. He is doubtful of the great value of electricity. He is convinced of the value of early gentle massage and passive exercises, and later active and resistive exercises. We believe he emphasizes an important point when he speaks of the desirability of avoiding heavy braces and of persistent attempts to get the children to walk without any apparatus except that to prevent deformity.

Obstetrical Paralysis. Peltesohn[29], after a careful Roentgenological examination of eleven shoulders in ten cases of obstetrical paralysis, has found an injury to the upper epiphysis in nine. Of these nine, three were true paralyses and six pseudo-paralyses. In all cases, therefore, of pseudo-paralysis a definite separation was seen. Peltesohn believes that a real separation of the epiphysis is much more frequent than Lange considers it to be. The treatment in infants consists in fixing the arm in a position of elevation, abduction, and outward rotation, provided the epiphysis is united. If the epiphysis is still loose a position, of course, must at first be maintained which is most favorable to union. In older children manipulation may be helpful, but with a fixed distortion of the shoulder osteotomy below the insertion of the tendons of the pectoralis major seems to Peltesohn to be the best procedure.

(To be continued.)

◆

Reports of Societies

SECTION OF GENERAL INFORMATION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of Monday, December 14, 1914, at 8.15 p.m.
Dr. James E. Talley in the Chair.

RECENT CHANGES IN OUR CONCEPT OF THE ACTION OF DIGITALIS.

Dr. H. C. Wood, Jr.: Many of the older theories concerning the effects of digitalis are drawn from experiments in which toxic doses were employed. When given in physiological doses, digitalis does not increase the blood pressure in either man or the lower animal. It is probable, however, that there is some constriction of the blood vessels, as is shown by the fact that when the slowing of the pulse is prevented the pressure is increased, and it is probable also that the diuretic effect is due to changes in the caliber of the vessels. The slowing of the pulse, which is the most constant effect of digitalis, is in healthy individuals purely inhibitory. Stimulation of the vagus may produce heart block and other irregularities of rhythm. The slowing of the pulse is completely abolished by large doses of atropine. The muscular tone is not demonstrably affected after small doses, although it is possible that the largest therapeutic doses may increase it. The cardiac contractions are, however, enlarged. The effects in disease are often very different from those in health. In fever the vagus appears to be less than normally irritable, and digitalis does not slow the pulse. In chronic endocarditis the effects are different according to whether the rhythm is normal or there is auricular fibrillation. In the latter condition it will generally produce very great slowing of the pulse. It is impossible from the present data to draw positive conclusions as to the mechanism of its action in this condition, but it is probably partly due to stimulation of inhibition and partly to diminished ventricular irritability, the result of better nutrition. In cases of endocarditis with normal rhythm its effects are often much less marked. It is a mistake to give digitalis in all cases until the manifestation of toxic effect. Some conditions require larger doses to have any action, while others may be injured by full doses, but benefited by small ones.

CLINICAL AND ELECTROCARDIOGRAPHIC STUDIES OF THE ACTION OF DIGITALIS.

Alfred B. Cohn, M. D., of the Hospital of the Rockefeller Institute for Medical Research: The investigations reported were made in patients having an early rather than an advanced stage of heart disease. The mechanism of their hearts was normal, they had no edema, and their blood pressure was within normal limits. The most important alteration we have been taught to look for is in the heart rate. The reduction in the rate of the heart is an effect of digitalis upon which we rely, but one which we have not found constant in the type of case we are considering. We have been led to conclude from our observations that digitalis slows the sinus rhythm only in the group or hypodynamic hearts, and, that to produce slowing is not a function of digitalis in therapeutic doses. An effect on conduction may be set down as a usual effect of giving the drug, apart from specific preëxisting injury. We have noticed delayed conduction within 48 hours after the administration of the drug had been started. In many instances the auriculo-ventricular internal gradually lengthened during the succeeding three to five days until partial heart block occurred. In some cases, however, block occurs with extreme abruptness. One arrhythmia, practically unknown, the results of giving digitalis, is one in which none of the auricular beats are blocked. The auricles and ventricles continue to beat almost at the same time, but there is incomplete coördination between them. Another new sign in the electrocardiogram is an alteration in the size, shape and direction in the T-wave. The first change noted after the administration of digitalis is usually a diminution of the height of this wave, usually in the third Lead first and later in the second. The change may be noticed as early as 24 hours, and at the end of 48 hours the wave may have become isoelectric, or it may become diphasic. In some electrocardiograms the T-wave for pathological reasons is pointed downward. If digitalis is given, the direction of the T-wave during the action of the drug is pointed upward. While the causative factors in the change of the T-wave cannot be precisely explained, the inference is that there is an alteration in the contractile substance of the heart muscle. Two criteria appear then in electrocardiograms to indicate surely the fact that digitalis is acting on the heart; the first in the slight but defi-lengthening in conduction; the second, the very curious alteration in the T-wave. Electrocardiographic evidence can be supplied to show that digitalis has an action during fever of a nature precisely similar to that already described in non-febrile patients. Possibly, as an aid to contraction, much can be gained from the use of digitalis, but the expectation of obtaining an action on heart rate must be abandoned. There is, however, a group of febrile cases in which digitalis acts efficiently on rate. These in our experience have been patients showing auricular fibrillation or auricular flutter. Another topic long a subject of conflict is the relation of digitalis action to blood pressure. In the cases we have studied no alteration in pressure was found. Vascular effects, however, aside from changes in pressure, may be produced, and the untoward or beneficial nature of these require consideration. The relation of digitalis to the excretion of urine also was discussed. In the group of patients under consideration no increase in diuresis takes place. In patients having edema, other factors are involved. That a specific effect on urinary output does not occur as the result of giving digitalis, in the patients under discussion, has an important bearing on the drug's action in edema. In connection with the mechanism of the action of digitalis two possibilities have been much discussed; an action on the inhibitory mechanism and one on the heart muscle itself. Our studies lead us to believe that both views are partly right. Insofar as atropin may be taken to be a drug acting especially on the ends of the vagi, a release of the heart from a phase of digitalis action by its use indicates a nerve action of digitalis. Insofar as digitalis has other effects which atropin does not release its effect on the T-wave, it may be inferred that it has an action directed more especially to muscle. Both effects can be observed at the same time.

Book Reviews.

Forty-Sixth Annual Report of the Secretary of State on the Registration of Births and Deaths, Marriages and Divorces in Michigan for the Year 1912. Lansing, Mich.: State Printers. 1914.

This forty-sixth annual registration report records the vital statistics of the State of Michigan for the year 1912. During this period the birth-rate of the state was 32.9, the death-rate 13.4, the marriage rate 21.8, and the divorce rate 2.7. There was a total increase of 3,781 births, 797 deaths and 1835 marriages over 1911.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, MARCH 25, 1915.

EDITORS.

ROBERT M. GREEN, M.D., *Editor-in-Chief.*
WALTER L. BURRAGE, M.D. } *For the Massachusetts Medical Society.*
FREDERICK T. LORD, M.D.

COMMITTEE OF CONSULTING EDITORS.

WALTER B. CANNON, M.D.
HARVEY CUSHING, M.D.
DAVID L. EDSALL, M.D.
REID HUNT, M.D.
ROGER I. LEE, M.D.
ALLAN J. MCLAUGHLIN, M.D.
ROBERT B. OSGOOD, M.D.
MILTON J. ROSENAU, M.D.
EDWARD C. STREETER, M.D.
E. W. TAYLOR, M.D.

ADVISORY COMMITTEE.

EDWARD C. STREETER, M.D., *Boston, Chairman.*
WALTER P. BOWERS, M.D., Clinton.
HOMER GAGE, M.D., Worcester.
JOEL E. GOLDTHWAIT, M.D., Boston.
LYMAN A. JONES, M.D., North Adams.
HUGH WILLIAMS, M.D., Boston.
ALFRED WORCESTER, M.D., Waltham.
ROBERT B. OSGOOD, M.D., Boston, *Secretary.*

ERNEST GREGORY, *Manager.* W. M. LEONARD, *Consulting Manager.*

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 *Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, *Manager.*

126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE LABOR CLEAN MILK BILL, AGAIN.

A CORRESPONDENT of the JOURNAL of March 11 criticizes the editorial of Feb. 25, favoring the so-called Labor Clean Milk Bill, and by inference the position of the Massachusetts Medical Society, which through its legislative committee, has appeared in advocacy of this bill before the Committee on Public Health. In so doing, the Society has ranged itself alongside the Milk and Baby Hygiene Association, the Consumers' League, and the Antituberculosis League. It also has been glad to find itself in accord in this instance with the Federation of Labor, which organization it has sometimes been pained and surprised to find opposed to measures of public health, as, for instance, smallpox vaccination.

The measure this year introduced by the Federation of Labor is, as was stated, simple and direct, and its advocates have clearly shown that no class of the community has so vital a stake in public health measures as the wage-earners. When, as now, the Labor party takes a wise and moderate position, it behooves the good citizen to avail himself of their certainly powerful aid.

The gist of the correspondent's opposition to the bill appears to be that it is unnecessary, as local boards of health have power to handle the situation. In a community whose health administration is as efficient as Canton's appears to be, a community drawing its milk supply wholly from its own confines or vicinity, and especially *inside the state limits,* this may be true. But the best local board, unless given abundant money to go and examine out-of-state sources, as is done in Massachusetts by Boston only, would be powerless to protect its inhabitants. A possible factor in the low estate of the milk industry in Massachusetts is the severer standard exacted of our own producers than that required of out-of-state farmers. This bill bears equally and impartially upon both.

Moreover, the scrutiny of out-of-state sources by separate municipalities would be very uneconomical. A bill has been reported giving the State Board an appropriation for this purpose, and should this be carried, the work of health boards, local or state, in penalizing filthy conditions of milk handling, would be much facilitated.

But, unfortunately, not all local boards are as wide awake and active as that of Canton. Many towns have no milk inspection whatever. In others, local politics, the overshadowing influence of some local magnate, and the hesitation of the local authority to offend a good neighbor, weaken the endeavor and efficiency of the local board. It is hardly adequate to say that in case of a feeble health board the people "ought to" rise up, sweep it away, and elect an active board. The torpor of the board only reflects the indifference of that community. In such cases, and in those only, the State Board should be empowered to step in, free from any local intimidation, and see that the people are protected against the consequences of their own neglect.

CHARLES F. WITHINGTON, M.D.,
President of The Massachusetts Medical Society.

FACTORS IN THE DURATION OF PULMONARY TUBERCULOSIS

In another column of this issue of the Journal we publish an important article by Dr. Crane on "The Diagnosis and Treatment of Pulmonary Tuberculosis." Now that a diagnosis of tuberculosis is no longer tantamount to a death sentence, the question of prognosis and duration in a given individual becomes most pertinent. In no other disease has this question quite the same significance, because this disease involves a personal incapacity and dependence over a long period of time as well as involving the undoubtedly large element of danger as a constant focus of infection unless the patient is maintained under strict surveillance, or unless he is himself sufficiently educated in the hygiene of tuberculosis so that he needs no surveillance.

While it is true that this question of prognosis and duration cannot be determined as easily or as definitely as in the rather few self-limiting diseases, yet certain conditions peculiar to this disease when accorded their proper values are of positive aid—namely, racial and hereditary predispositions or immunity, previous physical condition, occupation and environment, and the extent of the lesion in the lung at the time the patient first came under notice.

Although it is not scientific to speak of tuberculosis as racial or hereditary in its selection, yet practically speaking heredity and race seem to be profound factors in this disease. Certain races are comparatively immune to tuberculosis, or when occuring it runs in them a milder and longer course; in other races it is more common, runs a more severe and shorter course. The Jews have a relative immunity to tuberculosis which they may have acquired from having lived so many centuries in overcrowded and unhygienic quarters. The predisposition of the Irish and the Italians to tuberculosis manifests itself only after removal from their native environment. In the later generations after this removal this predisposition is gone, probably as a survival of the fittest. The proneness of the Italian immigrants to tuberculosis can be ascribed to the difference in occupation and the somewhat changed mode of life. The number of returning tuberculous Italians has been so large that their government has had to provide extra facilities for them. These immigrants wilted and succumbed in the attempts to be transplanted on new soil and under new conditions. After all, then, the question of race and heredity is only one of physical powers of resistance; it is the dominant characteristic possessed by one race, which may be lacking in another, that determines immunity or predisposition.

The physical condition together with the habits of life prior to infection modify the course of this disease, since they bear on the ability of the patient to withstand the devitalizing influences of the disease. It is peculiar that such individuals as have had outdoor occupations, who have engaged in heavy work, and who have robust bodies, such as are found among sailors, workers in the construction trades and the like, often fare much worse, or are incapacitated over longer periods, than the average city product of poor physique when he is infected—although, to be sure, the census of the latter is much greater. An explanation may be found for this condition in the fact that those of poor physique and of indoor life and occupation react very quickly and favorably to the stimulation of the new environment and the beneficent effect of the new mode of living enjoined on the afflicted. In tuberculosis the ability to make a change is of prime importance in effecting a cure. In the robust who have previously lived or worked out of doors, there can be little change for the better in the matter of environment at least, although there can be much change by way of temperate living.

While absolute reliance cannot be placed on the physical signs to denote the extent of the lesion and therefore the prognosis and duration, yet the size of the lesions, when they are considered in conjunction with the physical condition of the patient, furnishes important data in arriving at the prognosis. A large area of lung involvement and the patient withal in good condition means either that the infection is mild and of slow progress and long duration, or what is less likely, that the patient is extremely resistant to a rapid and severe infection. A lesion large of size but of recent origin would have been so rapid in its course as quickly to sap the patient's vitality. On the other hand the slow progress has made possible the development of a large area without great physical detriment to the patient; the slow progress allowing the body to overcome each new inroad of the disease as it arises. At no time is the disease allowed to become severe enough to overwhelm the patient. Moreover, a small lesion, with the patient nevertheless in debilitated conditions, means a rapid virulent infection and low resisting power, since if this type of infection had been of long standing it is not likely that it would have been limited to this small area, and if limited for a long time, it would not have had so deleterious an effect on the patient. During this period the patient would have been immunized against the toxic effects of the disease and shown little ill effects therefrom.

A large lesion, therefore, with good physical condition has a good prognosis both for ultimate outlook and duration—under proper conditions. A small lesion with the patient apparently overwhelmed within the short time that the disease has been manifest has a bad outlook even under the best conditions. Of course, a small lesion with the patient in good physical condition—*i.e.* incipient tuberculosis—in the average individual offers an excellent chance of recovery within a comparatively short time. It is these incipient cases which were unrecognized before the present rather more delicate methods of diagnosis—and, indeed, many of them are still unrecognized. It was Virchow who proclaimed the now famous dictum that all persons at one time or another are infected with tuberculosis but that most of them recover without symptoms or diagnosis.

The previous behavior of the disease is an important factor in determining its subsequent course, duration and severity, as well as the ability of the patient, from the economic standpoint, to carry out the necessary regimen for cure.

Finally, the most important element in the prognosis of pulmonary tuberculosis is its early diagnosis. An early diagnosis means cure. A late diagnosis, one at any time after the incipient stage, requires a guarded prognosis. It is the function of the practitioner to make the early and accurate diagnosis in order that the treatment may be prompt and efficacious.

◆

THE IMPORTANCE OF REST IN THE TREATMENT OF GRAVES' DISEASE.

In an exhaustive paper on the "Diagnosis of Thyroid Disease as Related to Surgical Treatment," presented at a recent meeting of the Medical Association of the Greater City of New York, Dr. Martin B. Tinker of Ithaca, who is a recognized authority on the subject of goitre, made the remarkable statement that he had succeeded in reducing the risk of thyroid surgery to a fraction of one per cent. This, he said, had been rendered possible only by "team work" in the matter of diagnosis and particular attention to the after-treatment. A decision as to whether or not thyroid disease existed, and whether such disease, if present, were the chief cause of the patient's discomfort, frequently required most careful application and wise interpretation of (1) a general physical examination; (2) special examination, especially of the eyes and throat; (3) laboratory tests; (4) x-ray examination. He emphasized the necessity of post-operative care for from six months to a year; stating that prolonged rest was of the utmost service, and that without this the surgical operation could not effect much. In the treatment of exophthalmic goitre, rest is no less an essential element in cases in which surgical interference is not called for than in those in which this is necessary. Many authors, in writing on this disease, make no reference whatever to its therapeutic value, and it would appear that its importance is by no means generally appreciated.

In concluding a paper, published in the *Medical Record* for March 13, in which are recorded certain observations on clinical treatments for this disease (which she prefers to designate by the name introduced by Bainbridge—systemic goitre,) Dr. Mary Sutton Macy, neurologist to the Demilt Dispensary, New York, lays stress on the kind of rest necessary in re-establishing the normal physiological balance in a patient suffering from the affection. Rest, if both physical and mental, affords unhampered opportunity to the *vis medicatrix naturae* to restore such physiological balance and possibly produce a cure. In the required regimen she contends drugs, sera, hormones and other therapeutic means take their proper places, as crutches prescribed to sustain, for the time being, some crippled portion of the organism, and should therefore be given symptomatically, and not as remedies for the hyperthyroidism *per se*. Rest, if properly enforced, requires considerable of the physician's time and personal attention, since only very few patients know *how to rest*. The art of muscular relaxation and passive innervation of the muscles is a difficult one to acquire, and a still more difficult one to teach to a patient whose whole personality is an expression of active innervation and muscular tension; and this kind of rest must be minutely taught to one who is the subject of Graves' disease.

Incidentally, Dr. Macy suggests as a possible theory regarding the etiology of exophthalmic goitre that it is a pathological syndrome secondary to a profound disturbance of the physiological pubertal balance by exhaustion of the nervous system, either rapidly by strong emotions, such as fear and grief, or more slowly through long-sustained effort to gratify ambition (intellectual or physical). This hypothesis is based first, on the fact that certain parallelisms in the picture of pubertal physiological balance and hyperthyroid symptoms have been noted by various observers, and, second, the general admission by most authorities that shock is an etiological factor, and the history of pubertal shock in one hundred per cent. of the cases in a series of forty-four recorded in her paper. The occasional cases of hyperthyroidism observed in children under the extreme low variation of normal pubertal age (which has been placed at seven years) may possibly be due to some similar condition which must account for the equally occasional cases of precocious menstruation and other infantile abnormalities of sexual maturity. Again, the fact that so many cases of Graves' disease are not recognized—or, as some claim, do not appear—until the third, fourth or even fifth decade of life, does not, it is contended, disprove the theory, since all authorities admit that hyperthyroidism is frequently masked for years, and often mistaken for neurasthenia, hysteria, chronic laryngitis, etc., prior to the appearance of the exophthalmos and the marked thyroid enlargement. If this etiological theory will bear dissection and proof, it will serve, the author believes, to explain in large measure why so many widely different types of treatment meet with similar successes and failures, dependent largely, if not entirely, on the extent to which the therapeutic measure, rest, is carried and enforced as an accompaniment.

SALARIES OF DISTRICT HEALTH OFFICERS.

In the issue of the Journal for March 11, we noted the appointment, by Dr. Allan J. McLaughlin, Massachusetts State Commissioner of Health, of the eight district officers who are to have charge of the administration of public health affairs under the direction of the state department of health. Under the law, the health commissioner was given the right to select and appoint these officers, but their salaries are to be established by the governor's council, and some uncertainty seems to have arisen in the determination of their compensation. At a recent meeting of the council to deal with this question, the following order was adopted, requesting the attorney-general's opinion on the interpretation of the statute dealing with this point.

"Ordered, that the attorney-general be and is hereby requested to give to the council his opinion concerning the legal effect of the first ten lines of Section 5, chapter 792, Acts of 1914, especially answering the following questions:

"1. In the event of the appointment of a district health officer by the commissioner of public health, with the approval of the public health council, taking place, is it necessary that the compensation, subject to the approval of the governor and council, shall be fixed before said district health officer is entitled to perform his duties?—or

"2. Is he so entitled to perform his duties after his appointment by the commissioner and approval by the council prior to the fixing of his compensation by the governor and council?

"3. Does the phrase 'shall not engage in other occupation and shall give their entire time to the performance of their duties,' prevent a district health officer from in any way practising his profession for his private gain?"

The attorney-general's decision on these questions has since been returned, and the Council on March 19 approved the salary schedule of the new district health officers.

* * *

ENFORCEMENT OF LAW FOR LOCAL TUBERCULOSIS INSTITUTIONS.

In an editorial on the local care of advanced tuberculosis in the issue of the Journal for February 25, we commented on the delinquency of various Massachusetts cities and towns in compliance with the law requiring the establishment of tuberculosis dispensaries in all communities of more than ten thousand inhabitants. During the past week, in accordance with a recent vote of the public health council, Dr. Allan J. McLaughlin, state commissioner of health, has issued a notification to thirty of these communities requiring them to comply with this statute before July 1 of the current year. The thirty cities and towns affected by this order are: Holyoke, Malden, Newton, Fitchburg, Taunton, Everett, Quincy, Chicopee, Medford, North Adams, Northampton, Beverly, Revere, Leominster, Attleboro, Westfield, Melrose, Woburn, Marlboro, Milford, Adams, Weymouth, Watertown, Southbridge, Plymouth, Webster, Methuen, Wakefield, Greenfield and Winthrop.

It is understood that the attorney-general will be asked to proceed against such communities as fail to comply with this request within the specified time. The law provides a fine of $500 as penalty for failure in such compliance. It is further expected that a similar notice will be served upon larger cities which have failed to establish tuberculosis hospitals, as required by law, and that these communities will be given until September 1 to meet this requirement.

◆

MEDICAL NOTES.

Low New York Death-Rate.—From figures supplied by Dr. William H. Guilfoy, Registrar of the Department of Health, it is clear that the past week in New York City was most healthful. The great decrease in the mortality of the week ending March 6, 1915, continued during the past week, although not to as large a degree as last week.

Comparing the figures for the past week with the corresponding week of 1914, reveals a considerably decreased mortality for nearly all causes of death, with the exception of the degenerative diseases, organic heart and kidney diseases, in which the death-rate was approximately the same.

So far as the age periods of those dying last week are concerned, the figures show a great saving of life among the adults, including the extremely old.

The death rate was 1 1-3 points lower, which corresponded to a relative decrease of 151 deaths. The death-rate so far this year, namely 13.95, is considerably below that of the corresponding period in 1914, there being a decrease in the rate of 1.5 points.

Negroes in the United States.—The bulletin on negroes in the United States, issued on March 20, by William J. Harris, Director of the Census, Department of Commerce, contains for the first time a statement regarding mortality among negroes. All previous census publications have given statistics for the total colored population, in which were included the Chinese, Japanese, Indians, and other non-whites. The data are shown for the registration area of the United States, the registration states and certain selected cities.

The negro population of the area was 19.7% of the total number of negroes in the United States in 1910, and the deaths numbered 49,499, with a death-rate of 25.5 per 1000 population— a decrease as compared with the rate in 1900, which was 29.4. The selected cities shown are the 57 registration cities which had, in 1910, a negro population of 2500, or more, for which comparable data are available in 1900.

In the 57 cities included in the table the death-rate among negroes in 1910 was 27.8, and that among whites 15.9 per 1000, the rate among the negroes being nearly twice as great as that for the whites. In the 33 northern cities the death-rate among negroes was 25.1 and that among white 15.7 per 1000, while in 24 southern cities the rate for negroes was 29.6 and that for whites 16.9. Thus the death-rates for each race were higher in the southern than in the northern cities, the difference between the races in respect to death-rate also being greater in the south.

Both negroes and whites show decreases in death-rate in 1910 as compared with 1900, when the 57 cities are considered in the aggregate, the decline for the negroes being 3.4 and for whites 2.5 per 1000 population. Every city in the south, except Key West, Fla., and Memphis, Tenn., showed a lower death-rate for negroes in 1910 than in 1900; the increase in Key West was only 0.2, while in Memphis it was 3.9 per 1000.

The general tendency appears to be in the direction of a declining death-rate for negroes in registration cities, the decrease being somewhat greater for negroes than for whites; as a result, the difference between the death-rate for negroes and for whites in these cities was not as great in 1910 as a decade earlier.

The question whether the decrease in mortality among negroes in 1910 as compared with that of 1900 was due to permanent causes, such as improved housing conditions, better medical attention, and in general improved sanitary conditions, and not to the absence of epidemics, is important and interesting. Undoubtedly one of the factors which has caused the decrease in the death-rate—which decrease is almost universal in the cities of the south—is the increase in home ownership among the negro population. The ownership of homes data for the northern states and cities are not available, and what is presented here relates only to the south. In the decade from 1900 to 1910 the number of homes owned by negroes in the southern states increased by

102,912, or 31.4%; this increase covering increase in farm homes of 30,449, or 16.7%; and in other homes of 72,463, or 49.8%.

LONDON DEATH-RATES IN JANUARY.—Statistics recently published show that the total death-rate of London for January, 1915, was 19.6 per thousand inhabitants living. Among the several districts and boroughs, the highest rate was 24.1 in Southwark, a populous southern quarter, and the lowest was 14.2 in Hampstead, an open district on the north.

COMMISSION FOR THE ERADICATION OF TYPHUS AND CHOLERA.—The American Red Cross Society and the Rockefeller Foundation recently made a joint offer to Dr. Allan J. McLaughlin, Massachusetts State Commissioner of Health, to go to Serbia as the administrative head of a commission for the eradication of typhus fever and Asiatic cholera. The funds necessary to finance this expedition were to be furnished partly by the Red Cross, partly by the Rockefeller Foundation, and partly by the Serbian government. Interesting and important though this expedition is, it is a matter of congratulation and good fortune for the Commonwealth of Massachusetts that Dr. McLaughlin decided to decline this opportunity.

The position was next offered to Dr. Richard P. Strong, professor of tropical diseases in the Harvard Medical School and has been accepted by him. Dr. Strong sailed, on March 17, for Europe, as a member of the Harvard expeditionary unit destined for service at the American Ambulance Hospital in Neuilly, Paris. It is presumable, however, that after landing at Gibraltar he will proceed instead to Serbia. It is announced by the Red Cross that the necessary sum of $50,000 has been procured for carrying out the work of this sanitary commission. The further personnel of the commission of which Dr. Strong is the head, will be as follows:—

Chief sanitary inspector, Dr. Thomas W. Jackson of Philadelphia; bacteriologist, Dr. Hans Zinsser, professor of bacteriology, Columbia University; clinical laboratory assistant, Dr. Andrew W. Sellards of the Harvard Medical School; clinical assistant, Dr. George C. Shattuck of the Harvard Medical School; assistant sanitary inspector, Dr. Francis B. Grinnell of the Harvard Medical School. Dr. Nicolle, the French expert on typhus, has been invited to coöperate with the commission. Charles S. Elby of Washington, lately connected with the United States immigration service, is disbursing officer and secretary.

PROMOTION OF DR. GORGAS.—It is announced from Washington, D.C., that Surgeon-General William C. Gorgas, U.S.A., has been promoted to be a major-general in the medical department.

AWARD OF THE BERLINER FELLOWSHIP.—It is announced that the Sarah Berliner fellowship for women has been awarded to Dr. Janet T. Howell, a graduate of the Johns Hopkins University. This fellowship of $1000 enables the recipient to engage in research in physics, chemistry or biology.

AMERICAN POSTURE LEAGUE.—The second annual meeting of the American Posture League was held in New York on March 13. Dr. Joel E. Goldthwait of Boston, vice-president of the league, delivered the leading address, on "Recognition of the Different Anatomic Types in the Understanding of Special Postures." Other addresses were delivered by Drs. William A. Howe, S. Josephine Baker, Anna L. Brown, Eliza M. Mosher, Henry L. Taylor and Percy W. Roberts of New York, and by Dr. F. R. Green of Chicago. The central committee on public health organizations, which met in New York on the same date and several of whose members are officers of the Posture League, also attended the meeting and the luncheon which preceded it. A meeting of the directors was held earlier in the day for the election of officers.

NATIONAL RADIUM INSTITUTE.—Report from Washington, D. C., on March 12, states that a second instalment of radium bromide, valued at $19,000, prepared by the federal bureau of mines at Denver, Colo., has been turned over to the national radium institute for use in the treatment of cancer and other affections.

FREE VACCINATION FOR GOVERNMENT EMPLOYEES.—Report from Washington, D.C., on Mar. 13, states that the treasury department has directed the medical officers of the United States Public Health Service to provide free vaccination against smallpox or typhoid fever, or both, for all civil employees of the government engaged in interstate travel or in handling mail or other material for interstate traffic, whenever request for such vaccination is voluntarily made by the employees.

GRADUATE SCHOOL OF MEDICINE OF CHICAGO.—A report from Chicago on March 13 announces the proposed establishment in that city of a new and comprehensive school of medicine and sanitary science, to be known as the Graduate School of Medicine of Chicago. The foundation is expected to begin its work on May 1, and will have provision for 3000 students.

"The graduate school will not be conducted for pecuniary gain. Its sole object will be the advancement of medical science. Cook County physicians will receive post-graduate work free. Outside physicians will contribute a nominal sum. A central bureau will disseminate information regarding discoveries made and work accomplished. Eventually the foundation will be under the control of the large universities of Illinois, thus eliminating any politics or commercialism. No favors will be shown any faction of the medical profession. Already 250 'teaching' physicians and surgeons in all branches of the medical profession have tendered their services as instructors. More than 100 more are to be selected, each regarded as an authority. The foundation will be composed of a number of hospitals, sanatoria, and laboratories in Cook County. It is proposed to have departments of both curative and preventive medicine.

PHILADELPHIA DEATH-RATES IN 1914.—A recently published monthly bulletin of the Philadelphia Board of Health summarizes the monthly statistics of that city for the year 1914. The total death-rate for this period was 16.5 per thousand, an increase of 0.5 over 1913. Several diseases showed an increased incidence also over the preceding year. Of the preventable diseases, pertussis increased 39%, influenza 48%, tuberculosis 4%, infantile diarrhea 18%, and pneumonia 14%. Of diseases not amenable to control, heart disease showed an increase of 7% over 1913, nephritis 2%, and apoplexy 9%. On the other hand, typhoid fever showed a diminution of 51%, scarlet fever 20%, diphtheria 7% and measles 63%.

EUROPEAN WAR NOTES.—Report from New York on March 13 states that a gift of $15,000 has been received in Philadelphia, enabling the medical school of the University of Pennsylvania to endow, for three months, a ward of forty beds at the American Ambulance Hospital at Paris.

Report from London on March 16 states that since the beginning of the war the loss of British horses has been at the rate of only 15% per annum, as compared with the loss of between 55% and 60% per annum in the South African war. This loss is more largely due to pleuropneumonia.

On March 19 the total of the New York Belgian relief fund amounted to $981,831.64; the New York Jewish relief fund to $573,267.00; the New York Red Cross fund to $470,871.44; the American Ambulance Hospital fund to $367,015.00; and the Prince of Wales fund to $112,503.59.

On March 20 the total of the New England Belgian relief fund amounted to $236,431.76; the Massachusetts Red Cross fund to $112,691.30; the Boston Jewish relief fund to $48,907.70; and the Boston German relief fund to $26,035.84.

BOSTON AND NEW ENGLAND.

MEASLES AND PERTUSSIS IN WAKEFIELD.—Report from Wakefield, Mass., on March 14 states that measles and whooping cough are, at present, epidemic in that town. Over 125 cases of measles have recently been reported, and it is expected that it will be necessary to close several of the local schools.

BOSTON DISPENSARY.—A recent report of the Boston Dispensary states that the number of patients who visited that institution during the month of February, 1915, was 8251, a marked increase over the preceding month and the corresponding month of last year.

PREVENTION OF CANCER.—On Wednesday afternoon, March 10, Dr. Edward Reynolds of Boston, vice-president of the American Society for the Control of Cancer, delivered an address on the prevention of cancer before a meeting under the auspices of the committee of the American Medical Association on public health education and the department of public health of the Women's Municipal League of Boston. The total mortality from cancer in the United States in 1913 was about 75,000. A considerable number of such deaths may be regarded as preventable. On Wednesday afternoon, March 17, Dr. Joseph L. Goodale, of Boston, spoke under the same auspices on "Some Disturbances of the Nose and Throat Which Impair Efficiency."

REPORT OF THE BUTLER HOSPITAL.—The recently published seventy-first annual report of the Butler Hospital of Providence, R. I., records the work and progress of that institution for the calendar year 1914. During this period 253 patients were treated in the hospital with only 20 deaths. Several important special methods of treatment were particularly tested, especialy the use of salvarsanized serum in general paresis and tabes. Twenty nurses were graduated from the training school. The superintendent's report emphasizes the urgent need of an adequately equipped gymnasium, and the trustees call attention to the work already done in the way of fire protection and the need of important new outbuildings.

STATE CONFERENCE ON TUBERCULOSIS.—"What the Anti-Tuberculosis Organizations Can Do to Help the State Department of Health," is the subject to be discussed by the Commissioner of Health, Dr. Allan J. McLaughlin, at the first annual meeting and all-day conference of the Massachusetts Anti-Tuberculosis League, to be held at the Twentieth Century Club, 3 Joy Street, Boston, Thursday, April 1, 1915. The Secretary of the Trustees of the Massachusetts Hospitals for Consumptives, Dr. John B. Hawes, 2nd, will speak on "The Situation in Regard to the New Tuberculosis Hospitals," and Dr. Walter G. Phippen of Salem will give some interesting facts in regard to the local tuberculosis dispensaries, required by law. At the afternoon session, to be held at 2.30, Dr. Walter P. Bowers of Clinton will speak on "The Reporting of Tuberculosis by Physicians," and Michael M. Davis, Jr., director of the Boston Dispensary, will discuss "Tuberculosis Associations as Health Educators." "The Responsibility and Opportunity of the Teacher in Preventing Tuberculosis" is to be treated by Dr. Thomas F. Harrington, director of school hygiene, Boston, followed by an address on "Inspection of School Children," by Dr. Francis L. Dunham of Brookline. The chief inspector of incorporated charities of the State Board of Charity, Miss Amy F. Acton will tell of "Some Observations of the Anti-Tuberculosis Work in This State," after which a general summing up of the afternoon session will be made by Mrs. William H. Lothrop of Newtonville. The conference is open to the public and will be in charge of its president, Dr. Vincent Y. Bowditch.

Harvard University Reports.—The recently published reports of the president and the treasurer of Harvard College include in the same volume, the reports of all the departments of the university for the academic year 1913-14. The president, in his report, calls attention to the opening of the Children's, Infants', Peter Bent Brigham and Collis P. Huntington Hospitals and to the appointment, by the United Fruit Company, of Dr. Strong as director of its hospitals in the West Indies and Central America. He also discusses various problems of internal organization of the Harvard Medical School, especially the questions of examinations and finance. Dr. Bradford's report, as dean of the Medical School, describes its activities during the year and refers in detail to the work of the several departments. He presents an interesting table, showing the comparative standing of the members of each class in the school at final examinations during the five years from 1910 to 1914, inclusive. Dr. Horace D. Arnold, in his report as dean of the Graduate School of Medicine, calls attention to the slight falling off in the number of students and receipts from the previous year, due apparently, to the general financial situation and to the European War. The report of the dental school, by Dr. Eugene H. Smith, summarizes the instruction and the clinical work in dentistry done at the school. During the year a total of 23,936 operations were performed by students and instructors in the school.

Report of Boston Medical Library.—The recently published thirty-ninth annual report of the Boston Medical Library records the activities of that institution for the year 1914. During this period there has been a net gain in membership of 42, and an increase of 4195 volumes and 984 pamphlets in the library.

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending March 16, 1915: Diphtheria, 78, of which 2 were non-residents; scarlatina, 72, of which 10 were non-residents; typhoid fever 1, which was non-resident; measles, 167; tuberculosis, 56. The death-rate of the reported deaths for the week was 17.63.

Obituary

RIGHT HON. SIR GEORGE TURNER, F.C.M.G., M.D. LL.D.

The Right Honorable Dr. Sir George Turner, F.C.M.G., has recently died at Colyton, Devonshire, England, of leprosy contracted during his research work on that disease in South Africa. He was born at Melbourne, Victoria, on August 8, 1851, and received his medical education in that country, where he became prominent also in public life as a member of parliament, minister of customs, minister of health, minister of defence, and solicitor general. In 1894 he became premier and served also as president of the federal council of Australasia, chairman of its standing committee, and member of the Australian national federal convention. In 1901 he became treasurer of the Australian federal government.

Dr. Turner's most important medical work was done in South Africa, where he discovered the serum by means of which the rinderpest was eradicated. He served in a medical capacity during the Boer War and arrested an epidemic of typhoid fever, which was sweeping the military hospitals and concentration camps at that time. In 1901, while supervising the suppression of the second great epizoötic of rinderpest, he became interested in the study of leprosy in the leper asylum in Pretoria, where there were nearly one hundred Dutch and native patients. It was during this work, which Dr. Turner pursued for several years, that he himself contracted leprosy, after which he withdrew from his public offices and devoted himself solely to the study of that disease. A few years ago he finally returned to England, where he settled in a country estate in Devonshire, to await the end.

For his public services Dr. Turner was created a baronet in 1897. He is survived by his widow.

* * *

Miscellany.

MEDICAL EDUCATION IN CHINA.

In the issue of the Journal for March 11 we commented editorially on the work and recent progress of the Yale-in-China Medical School. On March 4 a letter from Dr. Edward H. Hume, chief of the medical department of Yale-in-China, outlined, in a New Haven publication, plans for the new Yale Hospital at Hunan, China.

"A campus is being planned for which twenty acres of land have been purchased outside the city wall of Changsha, and $56,000 has been raised by Yale men to construct buildings on the plot. The Yale Hospital will be built on this campus, and a well-known firm of New York architects has already drawn plans for the buildings, which include, beside the hospital building, a dormitory, chapel and four buildings for professors.

"For eight years the Yale College in China has been carrying on its work within the city walls in crowded, unsanitary quarters. There are now enrolled 140 pupils in the school and college. Recently interest in this oriental branch of Yale College has become so manifest that many alumni gifts have been forthcoming. The hospital is the gift of a well-known Yale man."

Interest in occidental medical education in China is not limited either to Yale or to Harvard, though these have been the first American universities to establish and maintain hospitals and schools of medicine in that country. On March 7 it was announced in New York that the Rockefeller Foundation has decided to undertake a comprehensive plan for the improvement of medical and hospital conditions in China.

"For this purpose the Foundation has established a special organization to be known as 'The China Medical Board of the Rockefeller Foundation,' and plans as the first step toward effective work the development in China of medical education. This will include aid for the two or more medical schools in China, described as inadequately equipped, the strengthening of the staffs of the mission and other hospitals, assistance in the establishment of two modern tuberculosis hospitals, and the establishment of six $1000 scholarships, with travelling expenses, to enable Chinese graduates in medicine to prosecute further studies abroad, and of five scholarships to enable Chinese nurses to obtain training in this country."

In the establishment of these fellowships the purpose of the Foundation is to organize a body of Chinese physicians who in time will be able to assume leadership in teaching the medical sciences in their own country.

The action of the Foundation was based on the report of its special commission which, last year, made a personal study of the conditions of public health and medical practice in China.

"The commission was composed of Harry Pratt Judson, president of the University of Chicago; Dr. Francis W. Peabody of the Medical School of Harvard University; and Roger S. Greene, then consul general of the United States at Hankow.

"The China Medical Commission made numerous recommendations designed to meet the situation systematically, one of the primary ideas underlying the whole plan being to enlist the actual coöperation of both the missionary agencies and the Chinese people.

"The report of the commission has in its general outline been adopted by the Foundation as a basis for its work in China. Details, however, will be studied separately and each project will be taken up for definite decision."

In the report of this commission it is pointed out that,

"Not only have many preventable and easily curable diseases prevailed there, almost unchecked, from the earliest days down to present times, but intercourse with foreign countries and modern methods of communication have introduced into regions previously unaffected such scourges as bubonic plague and have contributed largely to the spread of other dangerous infections. So also have modern systems of transportation and of industry brought in an entirely new series of accidents and occupational diseases with which Chinese civilization is not yet prepared to cope. A special obligation, therefore, rests upon Western civilization to mitigate this suffering, for part of which it may be held directly responsible."

The personnel of the China medical board is further announced as follows:—

"John D. Rockefeller, Jr., chairman; Wallace Buttrick, director; President Harry Pratt Judson, President Frank J. Goodnow, Dr. Simon Flexner, Wickliffe Rose, Jerome D. Greene, Starr J. Murphy, John R. Mott, Dr. Francis W. Peabody, Dr. William H. Welch, Frederick T. Gates. E. C. Sage is secretary of the board, and Roger S. Greene is to be the resident director in China.

"The director of the board will have general administrative supervision over all its activities and particularly over the home office in New York. The resident director in China will have his headquarters in Pekin.

"The plan outlined by the commission looks forward to the development of medical education in China as the first step toward effective work. Before hospitals can be established in larger numbers, and before extensive work in public health and preventive medicine can be done, a large body of well trained doctors qualified to man hospitals and to administer public health measures must be secured.

"With a view to giving Chinese graduates in medicine opportunity to obtain their hospital training under proper supervision and to practice under favorable conditions, the Foundation intends to strengthen the staffs of the mission hospitals and other hospitals already existing in the vicinity of the medical schools aided.

"In hospitals thus more fully manned, young Chinese doctors will be employed as house officers or as visiting physicians, their compensation, when judged necessary, being paid by the Foundation. It is hoped that an intimate relation may be established between these hospitals and the medical schools near which they are located.

"It is proposed to enable the missionary societies to send out a larger number of well-trained nurses. An appropriation has also been made for five nursing scholarships to enable Chinese nurses to come to the United States and secure a first-class training at some of the leading schools in this country. A small appropriation has been made for the translation of nursing text-books, and aid may be given to some nurses' training schools.

"China suffers very greatly from tuberculosis, and has at present no institution specially equipped for the treatment of this disease. The commission, therefore, recommends that the Foundation assist in the establishment of two model tuberculosis hospitals built and equipped according to the best modern practice."

Correspondence.

PARIS LETTER.

The Wounded on the French Battle Line.

(From Our Special Correspondent.)

Paris, February 17, 1915.

Mr. Editor: In my last letter I endeavored to convey some idea of the state of humiliation into which this horrible war has plunged the surgical fraternity; it may next be of interest to inquire a little into the question of the causes of this lamentable overthrow. But first let us look at a few real scenes representing what actually takes place on a battlefield of today. About a year ago a maid I had had for some time married a non-commissioned officer of artillery. This man appeared to me to be quite a decent chap, but very much like the ordinary run of men of that class, good-looking, with a big moustache and becoming uniform. He left at once for the Luxemburg front at the outbreak of war with his battery of seventy-fives, and ever since that time has been sending his wife letters that show me how deeply mistaken I was in my estimate of this young fellow, who is something quite out of the ordinary. He began up at Longguyon in all the early frontier fighting, retreated with his guns from position to position, had his horse blown to pieces beneath him, was promoted, and ended up at the battle of the Marne where for five days and nights his cannon hurled death and destruction into the ranks of the Germans. Since that time his battery has seen less active service. He writes quires on quires, in a small neat hand, and in a style that is quite extraordinary for a man in that station; his long and minute descriptions of the fighting are so real that you can almost fancy yourself present; and they are interspersed at intervals with lurid and sulphurous curses and execrations of the enemy that ought to have set the mail-pouch on fire, alternating with transports of love, poetry and sentiment for the young wife he had to leave so soon behind him, and patriotic and religious effusions. The whole thing makes a mixture such as I imagine was never seen in print before, and I have strongly advised the young woman to keep these letters for possible literary use. In the meantime here are a few extracts concerning the effects of artillery fire, as an illustration of the fact which must always be borne in mind in speaking of the surgery of this war, that it is *a war of artillery*, whereas rifle fire has been relegated altogether to a lower plane.

After describing the death of his adjutant, who with his horse was simply blown to bits, so much so that they could hardly find enough of him to warrant burial, he continues: "I was sent ahead to reconnoitre, and after fastening my horse to a tree, crawled as flat as I could on all fours for several hundred yards, fearfully bothered and scratched by the briars that seemed to be everywhere. Finally I reached a hummock from which I could make out through the glass *masses* of German infantry and artillery crouching and hiding in some oatfields near a wood. Signalling this back to the captain of the guns, which had been masked separately here and there, they at once opened fire. *Never* shall I forget those oatfields! We felt for the exact range with shrapnel, and as soon as we had got it we let them have it with high explosion shell! Ah! the horrors of war, . . . arms, feet, fragments of bodies danced and flew in the air; we rallied and we mowed; other cannon and batteries joined in, and we hid them all under trees, or covered them with fresh branches, so that the enemy's aeroplane could not spot us. The Germans, on their side, 'watered' our region with heavy guns, but without finding us; a wood interfered with their work, so that their shells passed over and back of us. In three hours' time we killed upwards of 2000 of the troops discovered in those fields; three-quarters of them must have remained there for good, only a small portion having the courage to rise and make a bolt for it, so terrible was the effect of our shell-fire."

Later on; the same day.

"The Captain sends me for orders to the major, and then to the general, and we are informed that two kilometres to our left four mitrailleuses are onto our infantry and doing much damage. We leave our position at full trot, and take up another one, and then once more we give it to them with melinite shells, . . . melinite shells, . . . let her go, boys! I am lying on a ridge 300 metres in front of our cannon, in observation with the captain, who is now beyond shouting, his voice having given out; so he tells me the elevations and corrections and I yell them back to the guns. We are next notified that some German infantry is massed in a ravine in a certain direction, so we lengthen our range, and rôôff! . . . rôôf! . . . on it goes! The enemy is finally driven out, and our men of the line find 800 dead in that place, with three mitrailleuses out of service."

And so he continues, by the chapter. When he has written himself dry one day he closes and takes the story up in his next. At the Marne a big German shell falls right among his "avant-trains" (horses and caissons), hurling him head over heels in a cloud of asphyxiating smoke; but he picks himself up without a scratch, to find four of his gunners laid out, three severely wounded. Another shot kills nine horses and sets the shells in his caisson aburning; "but," he explains to his wife, "as they were not 'set' they merely burned with a yellow fume, and did not explode!" According to the German casualty lists, in some of those early encounters, when they simply hurled on battalion after battalion in massed formation against such fire as this, certain regiments lost 2500, 2800, 3000 and over, out of their approximate 4000. At one of the battles on the Meuse a French artillery officer wrote that *for seven consecutive hours* his guns fired into visible masses of Germans, until men and officers were utterly exhausted and practically deaf! Such tales as these enable us to understand that in this conflict the casualty lists have been something altogether unprecedented; after the battle of the Marne the French are said to have had upwards of 110,000 wounded to cope with, and the entire losses of the Germans are now certainly well up in their second million,—in fact they were authoritatively reported recently in the House of Commons as 2,250,000. These accounts also enable us to understand what the nature of a large part of these wounds must be. The modern rifle-wound, that does not kill outright, is a fairly safe investment; the force of penetration of the shrapnel ball is slight, and can be stopped by a helmet, tin-can, or even leather strap,—so that if you do not happen to be directly in the axis of progression of the projectile itself previous to explosion, your chances here are still fair; but the melinite, high-explosive obus of the French artillery is a *terrible* affair, and when the war is over the Germans will have something interesting to report on this score!

There has been a pretty widespread feeling among people here as regards the handling of the French wounded; all has not been altogether as it should be, in this war. All reports agree that the soldiers have been *admirably* fed, and that they have been well looked after, in general, as regards outfit, munitions, and even comforts; so that everything has gone as well as it could in wartime, until a man had the misfortune to be wounded,—from then on accounts have been less satisfactory. To such a point has this feeling been carried that a député, himself under arms, told me personally that he had tackled the head of the Service de Santé one day, and wagging his finger offensively under his nose, had said to him: "Monsieur! the day when some French mother *kills* you, she will have rendered service to her country." I don't believe myself that this fellow ever did anything of the sort, because if he had the other chap would have knocked his head off then and there; I merely cite the incident to show how he felt on the matter. On the other hand, the army medical department claims that they were utterly swamped; that no one ever expected to have to handle such quantities of wounded. I read in the papers that at one period, on the western scene of war only, the wounded were pouring back to Germany at the rate of forty to fifty thousand *per week*. However, all this may be, let us take a given man, wounded on the battlefield, and see what is likely to become of him, in *our* neighborhood; this may lead us to some explanation of this universal suppuration, with gangrene and tetanus.

Not only has a large percentage of wounds in this war been due to bursting shells, but the situation of the wounded has been made infinitely more serious by the increased range of modern arms, and by the aeroplane. The depth of the danger zone back of the actual firing-line is now several kilometres, and, save when your own side happens to be advancing pretty steadily, any such thing as first-aid or stretcher work *during the daytime* is practically out of the question, — it cannot be undertaken until night, and even then often at the greatest risk, with all these aerial flares, and searchlights, as the melancholy tale of killed and wounded among the army-surgeons reveals only too plainly. Consequently, the wounded man must either bandage himself with his emergency-dressing, or call on a comrade to do so. I do not know whether this dressing has been modified or not; but certainly in the early part of the war it was quite insufficient for anything except the simplest of wounds, bullet wounds of the hand, fore-arm, foot, etc. For wounds of the thigh, shoulder, thorax and even head, it proved quite inadequate; everyone knows how much material is necessary for a thigh or thorax wound.

Again. Although everyone has been using tincture of iodine over here for years now as an emergency antiseptic, the war had been in progress a good three months before it occurred to anyone that it might be a good thing to add a little tube of this material to the soldier's emergency package; and even when this was done the tube was really too small for serious shell wounds. A man with part of his thigh or hip blown away was not likely to derive much protection from a tiny tube containing one c.c. of tincture of iodine, yet these were really the men who needed it, as the bullet and shrapnel wounds, as a general thing, were fairly clean and took care of themselves.

According to schedule the wounded man was supposed to make his way in some manner or other to the *poste de premier secours*, whence he was to be forwarded to the supporting ambulance, and from there to the nearest evacuation railroad station. This looked very nice on paper; but with a battle-front of some hundreds of kilometres, and with the wounded piling up at the rate they did during active operations, one does not need to have a very active imagination to realize what actually occurred. Badly wounded men, with farcical dressings or none whatever, lay for days before they were found at all. Such as reached the ambulance accumulated there, the staff was overwhelmed, and supplies gave out. It was found that the devices for clearing out the ambulance wounded and getting them off to partial salvation, the railroad, were quite inadequate; such motor ambulances as existed were too big and too heavy, what was required being a small, handy, light affair, that could go over any kind of ground and turn round on a five-franc piece. Even when these wretched creatures reached the trains, their troubles were not even half over! A general's problem is first to have troops, and to supply them with all the munitions they require; secondly, to feed them properly; and only in the third place, and when *everything* else has been seen to, can he think of his waste, the wounded! The result can be imagined. The wounded had to be put in such care as was available, and had to be transported on the devil's own schedule, —that is, every other sort of train, of whatever description, had the right of way against them. When Joffre was in a hurry he sent his troop-trains along *both* tracks, that is, on both the up and down lines; consequently every train of wounded had to be on a siding until the entire strategic movement had taken place! Now as they were pretty usually freight cars, without the slightest pretence to a convenience, non-intercommunicating, and very often without surgeons, nurses, dressings or food,—you can once more let your imagination dwell on the situation and see the tableau. One of the members of the medical society here reported recently an instance in which a consignment of typhoid cases had been *five days* on their way to Paris from the front, an actual running distance in time of peace of between two hours as a minimum and five as a maximum; these patients appear to have had no care of any kind under way, not even enough to drink, and the mouths of several of them were in such a state on arrival that they developed suppurative parotitis from which they died.

Quantities of wounded were evacuated in trains that had transported cavalry and artillery. Furthermore, at all points where a damming up of patients occurred, there was no question of beds for them, of course, and they were put in every available quarters, usually on straw,—in box-cars, canal-boats, churches, freight-sheds, etc. Is it, then, any wonder that those hundreds of cases of tetanus occurred, with the disorder's well-known, frightful mortality? Nor had any provision been made for an adequate supply of antitetanic serum, nor was it in the proper place, in the very first line,—since its only action is as a preventive. It is rather a curious point to know that tetanus has developed in men without any wound whatever; I know of a case in which a man died from tetanus after a simple frostbite of the foot; and Sicard recently reported three other similar instances! This really seems like hard luck.

However, supposing our man past all the obstacles already referred to, was he then in a safe harbour? I am very much afraid not. The greater part of this work consisted in the most serious form of major surgery,—the very biggest thing of its kind. Now I need scarcely remark that under ordinary circumstances really first-class surgeons are few and far between, and that even the cream of these have never seen such butchery as they have been up against daily since the war began. These men, therefore, could not even *begin* to cover the ground, and by far the larger part of the wounded had consequently to be turned over to just pretty much anybody. Up to a certain point this was of course an ineluctable necessity; it was not possible to keep on hand a sufficient number of trained surgeons for the eventuality of such a war as this. But there is a side to the question that has hitherto not been made clear to me. That in the early stages of the war, when Paris was actually menaced, the authorities should have been opposed to letting the wounded be brought to the capital, where were all the facilities and highest skill, is more than comprehensible; but that this should have continued to be the case all through the war, is quite beyond *my* mental grasp. Numbers of well-equipped and well-staffed ambulances in this city have been given up, because they never saw a soldier. The administration's main idea seems to be, *anywhere* rather than Paris! It is fair to presume that there must be grounds for this attitude; but they are certainly not apparent to the man in the street.

We now come to the final point in this matter,—the nursing of the wounded. Here we are on terribly dangerous soil; walking on egg-shells is mere child's play by the side of this burning question. It has, of course, long been known that these people have not kept pace with other countries in matters of nursing the sick. Be the reasons what they may, the fact is incontrovertible, and admitted by them without circumlocution. Physicians who have spent any time in the wards of a Paris hospital have seen for themselves how matters stand there in time of peace; and anyone who has practised here knows about what goes on in cases of illness in private houses. With a view to meeting the demand that everyone foresaw must arise in the event of war, a variety of women's organizations were formed, some social, others religious and still others among ladies merely desirous of being of use and of doing their duty in the hour of need. Everyone recognized the devotion, willingness, energy and heart that these ladies have put into their almost superhuman task; but I think that just as everyone sees that the ordinary local practitioner, the man who under normal circumstances would pass a bad night in anticipation of the removal of a wen from his most valued patient, is absolutely incapable of rising to the emergency of the major surgery of warfare, so everyone now sees that no amount of kindness of heart or untiring zeal can take the place of the trained professional nurse at the bedside of a dengerously-wounded man. War-nursing does not consist in "the soothin' of fevered brows," as has been picturesquely remarked, and it is really necessary that a suitable nurse should know such details as which end of a bedpan to present to a bedridden patient. I refer here to an incident that actually occurred! In fact, if I may be allowed so to remark, I could here a tale unfold, but must refrain, the atmosphere being altogether too charged with electricity. It would not surprise me much if one of the happy outcomes of this dreadful war will be the introduction into France of the professional nurse as understood in England and America.

In conclusion,—I think that I have said enough, many, many times enough, to explain why the wounds in Paris suppurate, and why the surgical clan's pride is reposing humbly in the dust. "S."

PATENT MEDICINES AND QUACKERY.

Boston, March 12, 1915.

Mr. Editor: Within a few weeks Mr. Norman Hapgood spoke before a representative body of physicians, complimenting them on their virtues as members of a noble profession, and frankly telling them of some of their faults. Mr. Hapgood is a staunch friend of the medical profession and should be no stranger to it. He is a standard bearer in our fight against Patent Medicines and Quackery. The *Journal of the American Medical Association* is doing notable work, but is hampered in its influence by being a medical publication. The medical profession certainly should not need education in the matter of the harmfulness of the nostrum. The exploitation of one "fake cure" after another, however, classifies the individual physician's previously vague information. Of vastly greater significance is the work done in the popular press which, as it were, hits the bull's eyes and is disseminated among the innocent victims of this great evil, who need education in the dangers of the patent medicine habit. The *Harper's Weekly* is prosecuting a vigorous fight against this monster. The medical profession by an intelligent and hearty cooperation could at least hold the mirror up so that the fighter might sever the Gorgon's head. As physicians we can aid by making individual conversions and by never again prescribing a patent article just because of its convenience. Of course it does not always do harm, but every additional bottle sold encourages somebody to make his own diagnosis and get to the stage where medical science cannot succor him.

The least we can do at once is to help Mr. Hapgood by subscribing to the *Harper's Weekly* and spreading the gospel to those in our waiting rooms.

Very truly yours,
Hugh P. Greeley, M.D.

SOCIETY NOTICES.

Norfolk South District Medical Society.—Meeting for medical improvement at United States Hotel, Boston, Thursday, April 1st, 1915, at 11.30 a. m.

Reader, John W. Lane, M.D., of Boston, Mass., for M. T. Sweeney, M.D., of Norfolk Downs. Subject: Appendicitis.

F. H. Merriam, *Sec.,*
South Braintree, Mass.

New England Otological and Laryngological Society.—The next meeting of the New England Otological and Laryngological Society will be held on Tuesday evening, March 30th, at the Boston Medical Library at 8 o'clock. Program:

1. Gunshot Wound of Orbit and Pharynx, Dr. W. F. O'Reilly.
2. Fatal Hemorrhage Following Tonsil and Adenoid Operation, Dr. E. A. Crockett.
3. Death Immediately Following Tonsillectomy Under Local Anesthesia, Dr. D. Crosby Greene.
4. An Operation for Chronic Frontal Sinus Suppuration, Dr. Howard A. Lothrop (By invitation).
5. The Type of Voice in Tabes, Dr. W. B. Swift (By invitation).

William F. Knowles, *Sec.*

New England Branch of the American Urological Association.—There will be a meeting of the Society on Tuesday, March 30th, at 8.15 p. m., at the Harvard Club of Boston. Program:

1. Presentation of specimens, instruments, etc., and the report of cases.
2. Experimental and Clinical Observations on the Blood Pressure in Spinal Anesthesia, Dr. George G. Smith, Boston.
3. A New Preparation for Pyelography, illustrated, Dr. E. L. Young, Jr., Boston.
4. Some Unsettled Points in the Preparation for and Technic of Suprapubic Prostatectomy, Dr. Paul W. Pilcher, Brooklyn, N. Y. Discussion.

R. F. O'Neil, M.D., *Sec.*

The Norfolk District Medical Society.—A regular meeting of the Society will be held at the Boston Consumptives' Hospital, 249 River street, Mattapan, Tuesday, March 30th, at 3.30 p. m., sharp.

Tour of the Hospital, 3.30 to 5.00 p. m., business meeting and program, 5.00 p.m. Program:

1. The Organization and Management of the Consumptives' Hospital, Edwin A. Locke, M.D.
2. Relation of the Private Physician to the Out Patient Work of the Boston Consumptives' Hospital, Cleaveland Floyd, M. D.
3. Tuberculosis in Children and Adults with New Aspects on the Von Pirquet Test, T. J. Murphy, M.D.

Dinner at 6.30 p. m.

The censors will meet May 13th, at 2.00 p. m., for the examination of candidates.

Bradford Kent, M.D., *Sec.*
798 Blue Hill Ave., Dorchester.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FROM FEB. 12, TO MARCH 13, 1915.

February 15, P. A. Surgeon H. W. Cole, detached, *San Diego* to *Colorado.*

February 15, Surgeon L. L. Von Wedekind, to Marine Recruiting Station, New York, N. Y.

Asst. Surgeon A. T. Weston, M.R.C., detached, Marine Recruiting Station, New York, N. Y.

February 23, Asst. Surgeon W. E. Stevens, commissioned, Jan. 23, 1915.

February 26, P. A. Surgeon H. F. Lawrence, detached, Hospital, Newport, to New York Hospital.

March 1, Surgeon C. E. Ryder, detached, *Cincinnati* to home, wait orders via March 15, Transport.

P. A. Surgeon Heber Butts, detached, *Monterey;* to home, wait orders, via April Transport.

Asst. Surgeon P. B. Ledbetter, detached, Naval Hospital, Olongapo, P. I., to home, wait orders, via March 15 Transport.

Asst. Surgeon R. H. Laning, detached, *Saratoga* to home, wait orders, via April 15 Transport.

Asst. Surgeon R. F. Jones, detached, Naval Hospital, Canacao, P. I. to home, wait orders.

March 3, P. A. Surgeon J. C. Parham, commissioned from July 7, 1914.

March 10, Surgeon H. C. Curl, detached, *West Virginia* to *Maryland.*

Surgeon J. D. Manchester, detached, *Maryland* to home, wait orders.

P. A. Surgeon J. C. Parham, detached, *St. Louis,* April 1, 1915, to home and wait orders.

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession for the Week Ending March 13, 1915.

CONTRIBUTIONS.

Dr. Frank Slopanskey, Helper, Utah		$ 5.00
McKees Rocks Med. Soc. McKees Rocks, Pa.		6.50
Dr. James M. Anders, Philadelphia, Pa.		15.00
Dr. Charles M. Green, Boston, Mass.		25.00
Dr. J. M. Miller, Hickory, Pa.		5.00
Dr. John Woodman, New York, N. Y.		10.00
Dr. R. L. Bradley, Roswell, New Mexico		5.00
Dr. Everett D. Peek, Thompson Falls, Mont.		25.00
Dr. Charles L. Minor, Asheville, N. C.		15.00
J. M. H., Ft. Logan H. Roots, Ark.		5.00
Dr. Fred E. Thompson, Detroit, Mich.		25.00
Dr. Alfred H. Tickell, Nevada City, Cal.		2.00
Dr. Z. H. McClanahan, Colorado Springs, Col.		5.00
Dr. C. Dunbar Roy, Atlanta, Ga.		5.00
Hempstead Academy of Medicine, Portsmouth, Ohio		10.00
Dr. Halsey Beach Loder, Boston, Mass.		5.00
Dr. and Mrs. James R. Judd, Honolulu, Hawaii		25.00
Dr. Hugh T. Patrick, Chicago, Ill.		25.00
Receipts for week ending March 13		$ 218.50
Previously reported receipts		4611.50
Total receipts		$4830.00
Previously reported disbursements	$4614.60	
Disbursements week ending Mar. 13: 90 boxes of food @ $2.30	207.00	
Total disbursements		$4821.60
Balance		$8.40

F. F. Simpson, M.D., *Treasurer,*
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

INTERSTATE ASSOCIATION OF ANESTHETISTS.

The Interstate Association of Anesthetists will hold its organization meeting in conjunction with the Ohio State Medical Association in Cincinnati, Ohio, May 4-5, 1915, at which time an elaborate scientific program devoted exclusively to recent advances in anesthesia and analgesia will be presented.

Headquarters, assembly room and exhibits will be in the New Hotel Gibson, in which all the sections of the Ohio State Medical Association will also meet. An informal organization dinner will be served on the evening of May 4, after which the visiting anesthetists will be the guests at a smoker, of the local entertainment committee, headed by Dr. E. O. Smith. Visiting ladies will be entertained by Dr. Nora Crotty and her committee at a reception and theatre-party.

Anesthetists, surgical and dental, as well as interested surgeons and general practitioners who wish to participate in the proceedings are cordially invited to attend. For further information and dinner reservations address,

F. H. McMechan, M.D., *Secretary,*
1044 Wesley Ave., Cincinnati, Ohio.

SOCIETY NOTICE.

New England Pediatric Society.—The thirty-seventh meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, March 26, 1915, at 8.15 p.m.

The following papers will be read:

1. "The Management of Breast Feeding with Case Reports," Dr. C. K. Johnson, Burlington, Vt.
2. "Air and Water as Curative Agents," Dr. Roland G. Freeman, New York City.

Light refreshments will be served after the meeting.

E. M. Buckingham, M.D., *Pres.*
Richard M. Smith, M.D., *Sec.*

APPOINTMENTS.

Boston Dispensary.—At the last meeting of the Board of Managers, the following appointments were made: Consultant pathologist, *Dr. Frank B. Mallory; Dr. Wolfert G. Webber,* assistant to physicians, General Medical Department; *Dr. Harold B. Eaton,* assistant to the physicians, General Medical Department; district physicians, *Dr. George H. Binney;* district physician, *Dr. William F. Temple, Jr.*

State Health Council.—Governor Walsh has appointed *Mr. William P. Nickerson* of Norwood, Mass., to succeed Dr. Milton J. Rosenau as a member of the Massachusetts State Health Council.

RECENT DEATHS.

Dr. Horace Thaxter Sears, who died of pneumonia in Boston recently, was born at Medfield, Mass., on May 10, 1867. After studying dentistry, he settled in Boston where he continued active in the practise of his profession until his death. He was unmarried.

Dr. Henry S. Noble, who died at Waterbury, Conn., on March 16, was born in 1844. He was a graduate of Tufts College and of the New York College of Physicians and Surgeons. Since 1900 he had been superintendent of the Connecticut State Hospital for the Insane.

BOOKS AND PAMPHLETS RECEIVED.

A Study of Locomotor Ataxia, by C. H. Burton, M.D., and Frank Burton, B.S.

Official Register of Harvard University. Reports of the President and the Treasurer of Harvard College, 1913-14.

Cystoscopy and Urethroscopy for General Practitioners, by Bransford Lewis, M.D., and Ernest G. Mark, M.D. P. Blakiston's Son & Co.

A Text-book of the Practice of Medicine, by Hobart Amory Hare, M.D. Lea & Febiger, 1915.

IMPORTANT ANNOUNCEMENT

LIQUID ALBOLENE

We regret to say that supplies of Russian oil, from which LIQUID ALBOLENE is refined, are no longer obtainable, owing to the European war.

As soon as present stocks are exhausted LIQUID ALBOLENE will be out of the market.

To avoid inconvenience to physicians we have prepared an "American Liquid Petrolatum," which we are offering as a temporary product to take the place of LIQUID ALBOLENE until such time as we are again able to secure supplies of Russian oil.

American Liquid Petrolatum is of different chemical composition from LIQUID ALBOLENE, is of slightly less gravity and viscosity, and is less resistant to mineral acids. Limited supplies only are being refined, and we urge physicians to be careful to specify LIQUID PETROLATUM, AMERICAN, McK. & R., in order to secure the best preparation to be had during the war, or until LIQUID ALBOLENE is again procurable.

Two Varieties — PLAIN and AROMATIC

McKESSON & ROBBINS, 91-97 Fulton St., NEW YORK

THE STORM BINDER AND ABDOMINAL SUPPORTE

(PATENTED)

Adapted to use of Men, Women Children and Babies

Modifications for Hernia, Relaxed Sacro-iliac Articulations, Floating Kidney, High and Low Operations, Ptosis, Obesity, Pregnancy, Pertussis, etc.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours

KATHERINE L. STORM, M.D., 1541 Diamond Street, Philadelphi

INDEX TO ADVERTISEMENTS

American Engraving Co. xvi
Armour & Company xviii
Aseptic Service Co. xi
Automatic Appliance Co. xvi

Boston Hygienic Corset Co. ii
Boston Laboratories xii

Cassini's Olive Oil ix
Chandler Corset Co. x

Eastman Kodak Co. vi

Fisk & Arnold .... Artificial Limbs xvii
French Lick Springs .... Pluto Water iv

Harvard Dental School xii
Harvard Medical School xii
H. O. Oatmeal vi
Hotel San Remo xiii
International Instrument Co. ix
Jefferson Medical College .... Philadelphia xii
King's Puremalt v
Mahady, E. F. Co. ii
Massachusetts General Hospital vii
McKesson & Robbins xvii
Medical School of Maine xiii
Medico-Chirurgical College xii
Merck & Co. xvi
Motor Car Service Co. xvi
Mulford, H. K. Company iii

New York Eye and Ear Infirmary xiii
New York Polyclinic Medical School xii
New York University xiii
Nurses' Directory xiii

Parke, Davis & Co. vii
Pomeroy xviii
Professional Cards .... xiv and xv

Quaker Oats ix

Saunders, W. B. Co. .... Publishers i
Sharp & Dohme .... Chemists v
Sherman's Bacterins iv
Storm Binder xvii
Syracuse University xii

Thayer, McNeil Co. x
Tufts College Medical School xiii

Warren Chambers xvi

Fisk & Arnold

Established 1865

Oldest Manufacturers in New England of

ARTIFICIAL LIMBS

For Every Amputation.

United States Government Bonded Manufacturers

The procuring of an artificial limb is a most important matter and the Doctor cannot afford to trust his patient in any but the most reliable hands. Our experience of nearly half a century guarantees our reliability.

MANUFACTURERS OF THE LINCOLN ARM

The accompanying cut illustrates a limb for unjointed knee amputation, with toe, ankle, and knee articulation.

A full descriptive catalogue with important suggestions to the patient will be forwarded upon application.

3 Boylston Place, Boston, Mass.

Telephone, Oxford, 3684-M.

Armour's LABORATORY Products

Fresh raw material makes the most reliable goods

Armour's
Thyroids—powder and tablets
Parathyroids—powder and tablets
Anterior Pituitary—powder and tablets
Posterior Pituitary—powder and tablets
Lecithol
Extract of Red Bone Marrow
Elixir of Enzymes
Peptonizing Tablets
Peptonizing Powder
Pituitary Liquid—standardized and dated

Corpus Luteum *(Armour)*

GUARANTEED from true substance. In amenorrhea, dysmenorrhea, artificial menopause, reflexes of nervous or congestive origin, psychoses, neurasthenic symptoms during menstrual life, sterility, impairment of ovarian function, repeated abortions, hyperemesis of early pregnancy.

In powder, 5-grain capsules and 2-grain tablets.

ARMOUR AND COMPANY Chicago

POMEROY
FRAME TRUSS

A special appliance, built, fitted and adjusted to meet the requirements of the wearer.

The principal features of the POMEROY—rigid, unvarying support, accurate bearing and positive resistance, are only found in this exactly proportioned and perfectly fitting Truss.

POMEROY COMPANY
41 WEST STREET, BOSTON

Jamaica Printing Company, Jamaica Plain, Boston, Mass.